INTERSTATER
Assembly Instruction Manual

New Holland (Cab or Rops Tractor) Models
TL-80, TL-80A, TL-90, TL-90A. TL-100 & TL-100A

Tractors equipped with additional options, special equipment, tractor manufacturer modifications, new tractor models, or Customer alterations may prevent this Mount Kit from being properly mounted to the tractor. Alamo Group is not responsible for modifications to the MountKit to accommodate these differences.

ALAMO INDUSTRIAL
1502 E. Walnut
Seguin, Texas 78155
210-379-1480

Manual
P/N 02981341

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INTRODUCTION

ABOUT THIS MANUAL:

The intent of this publication to provide the competent technician with the information necessary to perform the CORRECT Assembly to the Alamo Industrial Product. This will, in turn provide for complete customer satisfaction

It is hoped that the information contained in this and other Manuals will provide enough detail to eliminate the need for contact of the Alamo Industrial Technical Service Dept. However, it should be understood that many instances may arrive where correspondence with the Manufacturer is necessary.

CONTACTING MANUFACTURER: (Please help us Help You! Before You Call!)

Alamo Industrial Service Staff Members are dedicated to helping you solve your problem, or your customer's service problem as quickly and efficiently as possible. Unfortunately, we receive entirely to many calls with only a minimum amount of information. In some cases, the correspondent has never gone out to look at the equipment and merely calls inquiring of the problems described to him by the operator or customer.

Most calls received by Alamo Industrial Service can be classified into approx. 6 general categories.

1. Hydraulic or Mechanical Trouble Shooting.
2. Request for Technical Information or Specifications.
3. Mounting or Fitting Problem.
4. Special Service Problem.
5. Equipment Application Problems.
6. Tractor Problem Inquiries.

HOW YOU CAN HELP:

Make sure the call is necessary! Most of the calls received may not be necessary if the Dealer Service Technician would do the following.

1. Check the Service Information at your Dealership provided by Alamo Industrial, This would include, Service Bulletins, Information Bulletins, Parts Manuals, Operators Manuals, Assembly Manual or Service Manual, many of these are available via the Alamo Industrial Internet site (www.Alamo-Industrial.Com). Attempt to diagnose or repair problem before calling.

2. If a call to Alamo Industrial is needed, Certain Information should be available and ready for the Alamo Industrial Service Staff. Such information as, Machine Model, Serial Number, Your Dealer Name, Your Account Number and Any other information that will be useful. This information is vital for the development of a prompt and correct solution to the problem. This will also help to develop a database of problems and related solutions, which will expedite a solution to future problems of a similar nature.

3. The technician may be asked to provide detailed information about the problem including the results of any required trouble shooting techniques. If the information is not available, The technician may be asked to get the information and call back. Most recommendations for repairs will be based on the procedures listed in the Service Manual / Trouble Shooting Guide and Information provided by customer.

CONTACT ALAMO INDUSTRIAL:

Alamo Industrial, 1502 E. Walnut St. Seguin TX. 78155, Technical Service Dept. PH: 830-379-1480

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GENERAL INFORMATION

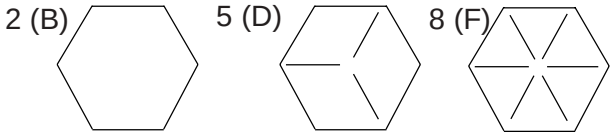
The tools you will need at the assembly site are as follows:

1. Impact wrench or socket and ratchet set.
2. Rubber mallet.
3. Box-end, Allen, and adjustable wrenches.
4. Alignment pins.
5. Forklift or hydraulic floor jacks with rolling back boards.
6. Small chain hoist or block-and-tackle.
7. Multidirectional Levels.
8. Hydraulic Filter Buggy or Cart.
9. Safety shoes, safety glasses, and gloves.
   A hard hat should be worn by anyone working under any raised component.

Remember to follow each step closely and cautiously. Be aware of all support personnel at all times. Keep the assembly area as clean as possible; clean up all spills when they occur. An uncluttered assembly area and a crew that is sensitive to the hazards involved in putting this implement together will help prevent accidents. Keep all unauthorized personnel from the area. Do not allow children near the assembly site nor allow them on or near the tractor after assembly. There is no safe place for anyone except the operator on the tractor and those assisting with the assembly.

RECOMMENDED TORQUE VALUES CHART:

RECOMMENDED TORQUE IN FT.-LBS. (Nm)
COARSE AND FINE THREADS



Bolt Dia.	Plain Head	Three Dashes	Six Dashes
1/4"	Not used	10 (14)	14 (19)
5/16"	Not used	20 (27)	30 (41)
3/8"	Not used	35 (47)	50 (68)
7/16"	35 (47)	55 (75)	80 (108)
1/2"	55 (75)	85 (115)	120 (163)
9/16"	75 (102)	130 (176)	175 (237)
5/8"	105 (142)	170 (230)	240 (325)
3/4"	185 (251)	300 (407)	425 (576)
7/8"	160 (217)	445 (603)	685 (929)
1"	250 (339)	670 (908)	1030 (1396)
1-1/8"	330 (447)	910 (1234)	1460 (1979)
1-1/4"	480 (651)	1250 (1695)	2060 (2793)

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GENERAL INFORMATION

To help you assemble your new Brahma and mount it to your tractor, we provide you with drawings, instructions, and general information. When needed, you can get information or clarification from Your Dealer or Alamo Group Customer Service.

This publication provides general information not specifically for your case or tractor, but, in connection with the drawings and Parts Section, this publication offers you some valuable assistance - please read it thoroughly.

The mount kits are made for selected tractors with standard configurations. Only the noted options and tire sizes listed in the model specifications will work with these mount kits. Other options, front axles, or different tire sizes may prevent the mount kit from fitting your nonstandard tractor. Alamo Group cannot take responsibility for these problems or any modifications made to the unit.

Throughout these instructions, In the Parts Mnaual, Operators Manual and decals on unit you will see the following symbles, pay close attenion to them. References are made to right or left directions. Right and left are determined by sitting on the tractor seat and facing the direction of travel.

This is the Safety-Alert symbol. When you see this symbol on your machine or in these instructions, be alert to the potential for personal injury. Follow recommended precautions and safe operating practices.

DANGER!

A signal word - **DANGER**, **WARNING**, or **CAUTION** - is used with the Safety Alert symbol. **DANGER** identifies the most serious hazards.

WARNING!

Safety signs with signal word **WARNING** are typically used to point out more serious hazards.

CAUTION!

General precautions are listed on **CAUTION** safety sign. **CAUTION** also calls attention to safety messages in these instructions.

DANGER
CRUSHING AND PINCH POINTS
MOVING MACHINERY PARTS CAN PINCH OR CRUSH
OR FALL- WHICH MAY CAUSE INJURY OR DEATH.
02962765

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NOTES

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Section 1

INTERSTATER New Holland TL100 Tractor

PRE-DELIVERY INSPECTION CHECKLIST

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PRE-DELIVERY INSPECTION CHECKLIST

Pre-Operation Inspection: Check the following items before operating the unit to assure that they are properly assembled. (See following page 1-4 for component location)

Saftey Equipment:

___ Operators Manual is with Unit.
___ The Safety Decals are installed as listed in the Assembly Manual.
___ Valve operation plate is installed.
___ Operators cage or Tractor Cab is in place
___ Deflectors are installed on the Mower Head
___ Tractor Rops or Cab with seatbels installed properly.
___ All Foot Guards and safety switch are installed and functional.

Frame:

___ Axle Plate Bolts are torqued.
___ Head Mounting Bolts tightened.
___ Frame attaching Bolts tightened.
___ Front Support Bolts are torqued.
___ Hydraulic Tank mounting Pins / Bolts in place correctly.
___ All Welds inspected toinsure proper welds and locations.

Hydraulic System:

___ Oil Level in Hydraulic Tank is within the sight gauge. (Item 5 page 1-4)
___ Hose connections are tight.
___ Hoses do not have any kinks or twist in them.
___ Front Pump Shaft adapter bolts are tight.
___ Front Pump Shaft Coupler / Drive Shaft is lubricated and has an anti-seize compound on the Splines of Pump and Shafts.
___ The Pump Drive Shaft has correct alignment.
___ Suction Hose has no leaks or kinks.

Flail Mower Head:

___ Skid Shoe Bolts are torqued to 120 ft-lbs
___ Motor Bolts are torqued to 120 ft-lbs
___ Belt Alignment& tension adjustment is correct.
___ Cutter shaft bearings are properly lubricated
___ Roller bearings are properly lubricated
___ Blades swing freely.
___ All Pins and Clips for Rear Mower are installed
___ Clutch on Rear Mower has been checked for proper adjustment and conditions per parts book reguirments.
___ All Belt guards are installed correctly.

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PRE-DELIVERY INSPECTION CHECKLIST

Pre-Operation Inspection: Check the following items before operating the unit to assure that they are properly assembled. (See following page 1-4 for component location)

Tractor Mower Operation Inspection:

Using all Safety precautions, operate the Tractor and Mower unit for 30 minutes and while the unit is running check the following items: **Note!** Only make adjustments after the mower has been turned off and all motion has stopped and all hydraulic pressure has been relieved.

___ Check for Hydraulic oil leaks at the hose connections
___ Operate the boom and mower head throughout its full range of motion and check for hose's rubbing, pinching, or kinking.
___ Make sure the Return Filter Gauge is reading in the Green after Oil is warm.
___ Check the function of the Mower Head On-Off Valve and switch for proper function
___ Make sure that the tractor will not start with the mower on-off switch in the on position.
___ Check the Blade Rotation for the Rotary Mower Head to make sure it is turning Clockwise looking from the top of the mower deck.
___ Make sure the control valve boom movements agree with the valve operation decal.
___ Make Sure Boom Movement operates as expected and is smooth and under control (no air in the control system)
___ Look for any unusual or excessive noise or vibrations.
___ Make sure the left rear wheel of the tractor stays on the ground when the boom is fully extended horizontally with 200 lbs. placed on the outside of the mower head.

Post-Operation Inspection:

___ Check that the oil in the hydraulic tank has not turned milky in color or has foam on top.
___ Check that there are no loose fasteners or hardware.

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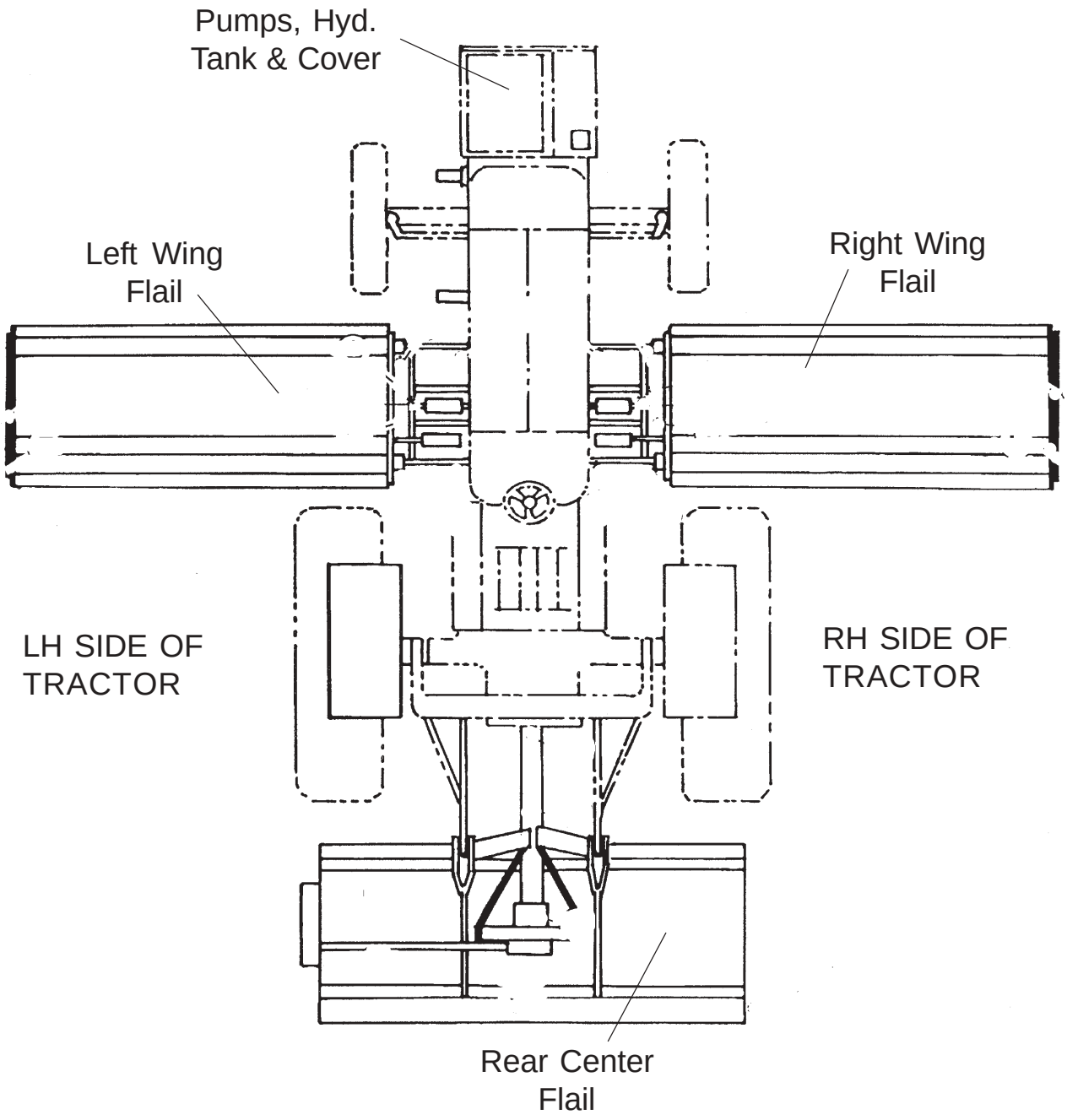
Tractor - Mower Component Location For Check List



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Section 2

INTERSTATER

Driveshaft & Pump Installation

New Holland TL-100 Tractor

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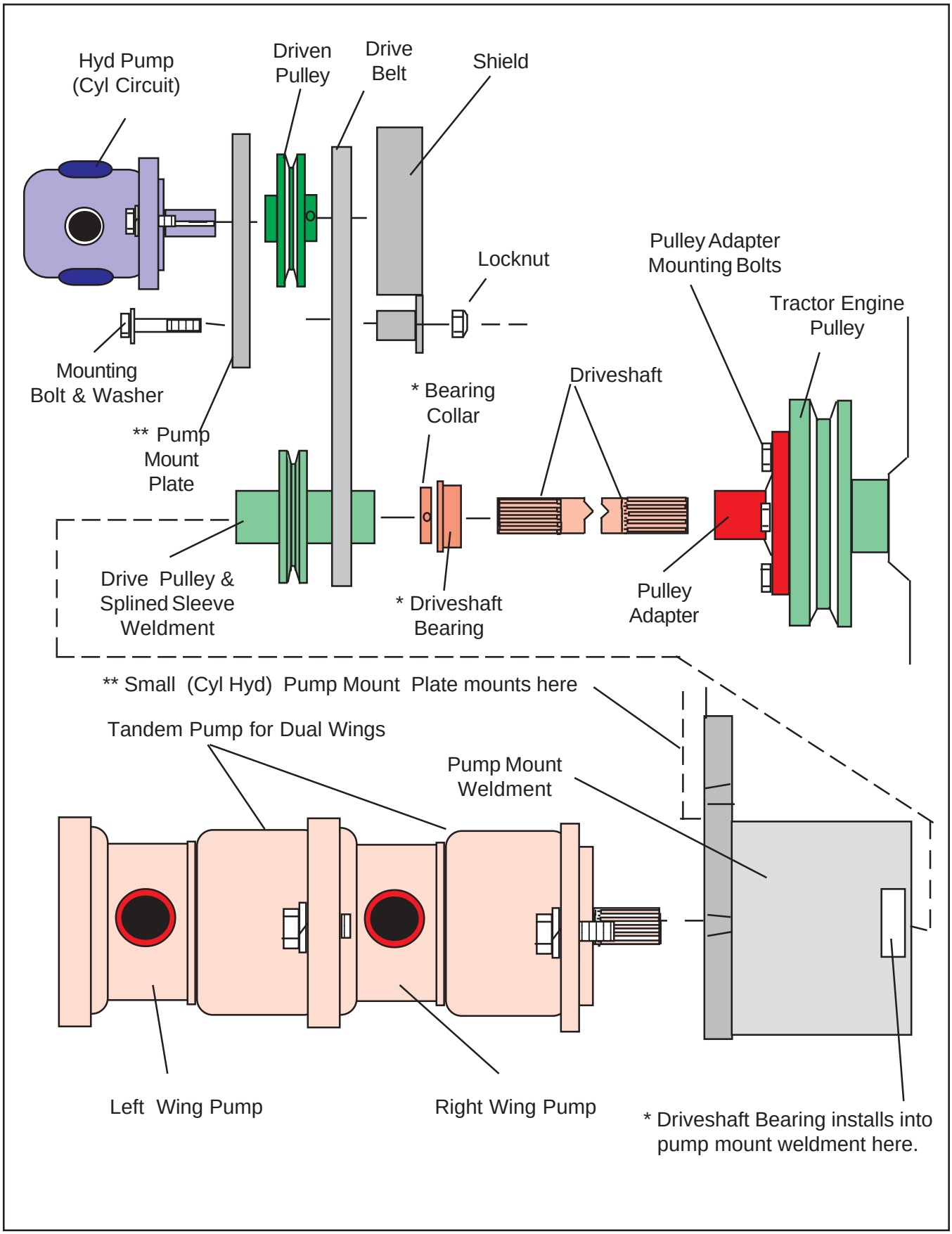
Driveshaft & Pump Schematic



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Driveshaft, Pump & Tank Installation

Pulley Adapter & Driveshaft:

1. Remove Engine Guard Screen. The Engine on the LH side has a bolt on screen cover that will need to be removed to gain access to the crank shaft pulley (See Figure 1).

2. Install Pulley Adapter to Engine Crankshaft Pulley. The Spined Pulley adapter bolts to the engine crankshaft pulley with 4 bolts. These can difficult to get to when tightening the bolts. Tighten the bolts that you can get to from LH side, it may require that you remove the guard from the RH engine side to gain access to tighten the bolt. (See Figure 2)

3. Re-Install Engine Guard Screen. Put the engine guard back on the LH side of the engine using the same bolts that were removed (See Figure 1).

4. Remove The Battery and Battery Tray. Disconnect the battery cables from the battery which is located in front of the tractor radiator. The Battery and Battery Tray will have to be removed before the driveshaft can be installed. The Battery tray and the Battery Hold Down will be reused. (See Figure 3). **The battery is held down with a piece that is retained with the front two bolts. The rear has two bolts also. The RH rear will also have the battery ground cable connected to it.**

5. Modify Tractor Front Bolster. The Front Bolster of the tractor will have to be modified by grinding part of it off. Before any grinding is done cover the front of the radiator so the metal from grinding will not go into the radiator or Air condition condenser cooling fins, a piece of card board works well for this. It is recommended that a 1-1/2" wide by 1/4" or better be ground in the center under where the driveshaft will run. This Space will have to be check and adjusted accordingly (See Figure 3 & Figure 4). Clean the metal dust from around front bolster with a shop vac. DO NOT use air to blow them out as they will blow into the engine compartment and be blown back out next time engine is started.

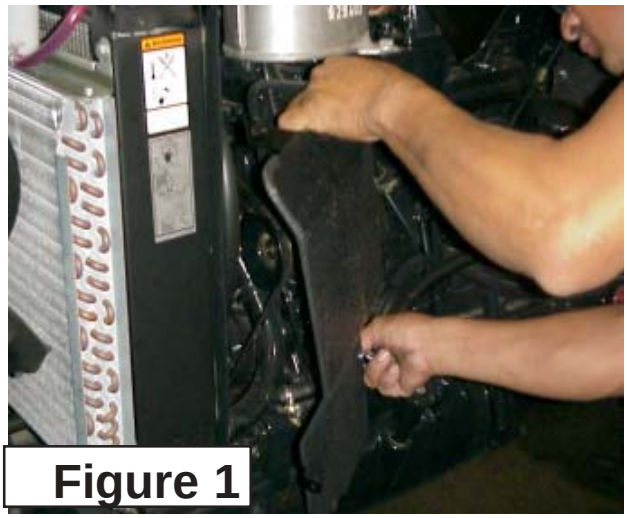

Figure 1

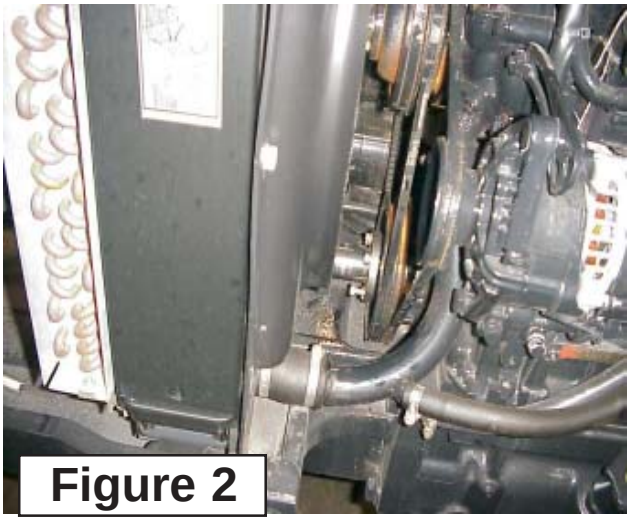

Figure 2

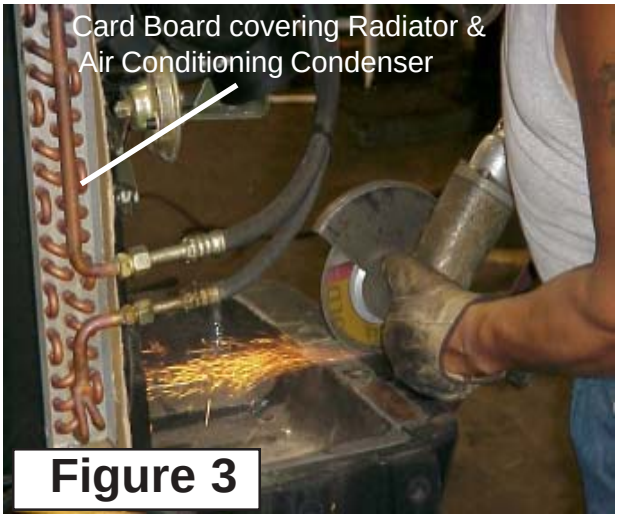

Figure 3

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Driveshaft, Pump & Tank Installation

5. Install Driveshaft. The driveshaft is to be installed under radiator and into the crankshaft pulley adapter. The drive shaft is splined on both ends. The splines will have to align with the spline in the crankshaft pulley. The driveshaft will lay on the front bolster in the ground out area for now (See Figure 4). If you push the driveshaft in until it bottoms out in the pulley adapter and hold in on it, the driveshaft should clear the front bolster. If it doesn't then you will need to grind more out. **After the driveshaft clears and the metal grinding have been cleaned remove the card board (or what ever) you covered the radiator with.**

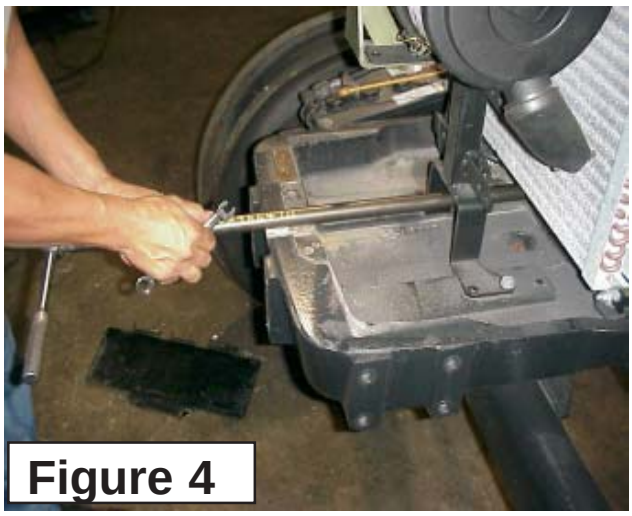
Figure 4

6 Install Battery Tray. There are 4 spacers that are needed to raise the battery tray up from stock height so it will clear the driveshaft.
Install these spacer onto the tractor bolster (See Figure 5). You will need to use the four new bolts which are longer than the ones you removed from the battery tray. Install the Battery tray down over the four spacers and install the four new bolts, the two front bolts will have flatwashers and the RH rear bolt will have the battery ground cable connected to it. The two front bolts will have be removed to install battery later. (See Figure 6)

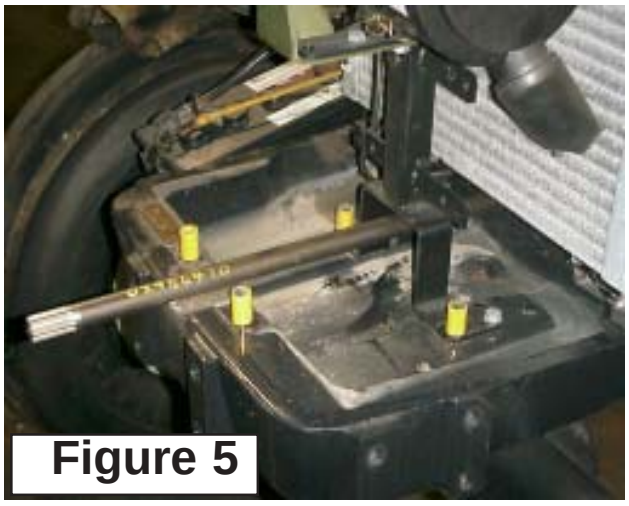
Figure 5

7. Install Battery. The Battery will need to be slid into place, for this the two front battery tray bolts and battery hold down will have to be removed (See Figure 7) . Slide battery in until the groove on the back bottom side of battery is into back side of batter tray. Install front two bolts and the battery hold down (See Figure 8). Make certain the hold down is set into the groove along the bottom of the battery before tighten the two front bolts.

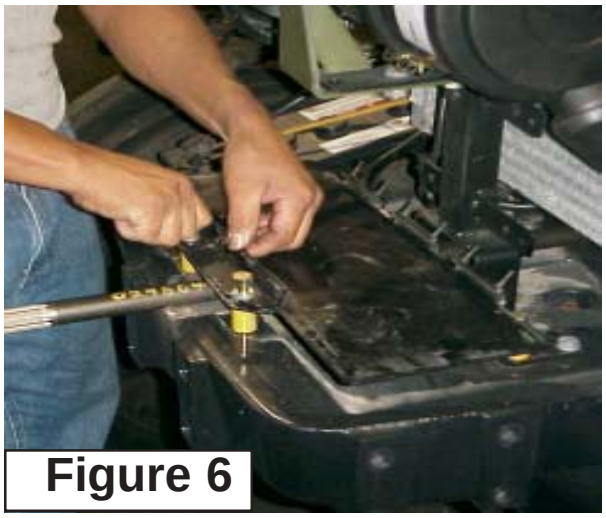
Figure 6

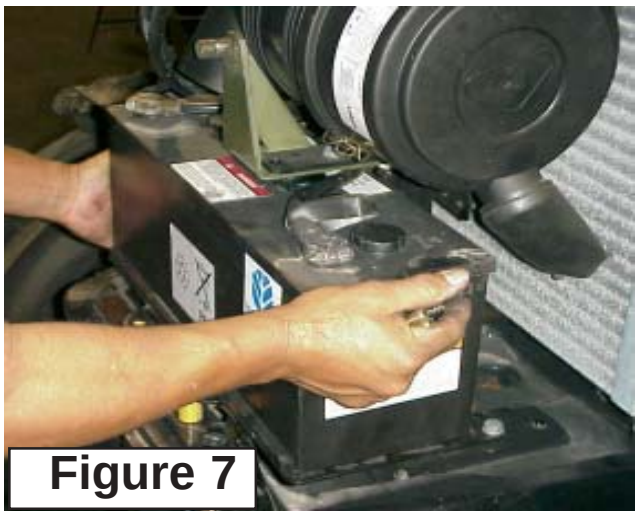
Figure 7

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8. Reconnect Battery Cables. The Battery cables can be reconnected now to test fit, but it is best to leave the ground cable disconnected from the batter until after all the wiring of the wiring harness is completed later in the assembly process. (See Figure 8).

Figure 8

9. Install Pump Mount Weldment. The pump mount weldment has a carrier bearing in it. There is a locking collar on the bearing, make certain the set screw in locking collar is loosened before trying to slide it over the driveshaft. Start the driveshaft through the carrier bearing (See Figure 9). There are two spacers that must install between pump mount weldment and tractor bolster, install these two spacers now (See Figure 9). Each spacer will have two holes, The Carrier Bearing should slide over drive shaft far enough for the pump weldment to fit tightly up against the spacers and the spacers against the tractor bolster. Tighten the four mounting bolts to tighten the pump mount weldment (See Figure 10). Check the clearance between drive shaft and tractor front bolster where you ground bolster. It the driveshaft doesn't have clearance the bolster will have to be ground down again (See Figure 10). **DO NOT Tighten locking collar on carrier bearing yet.**

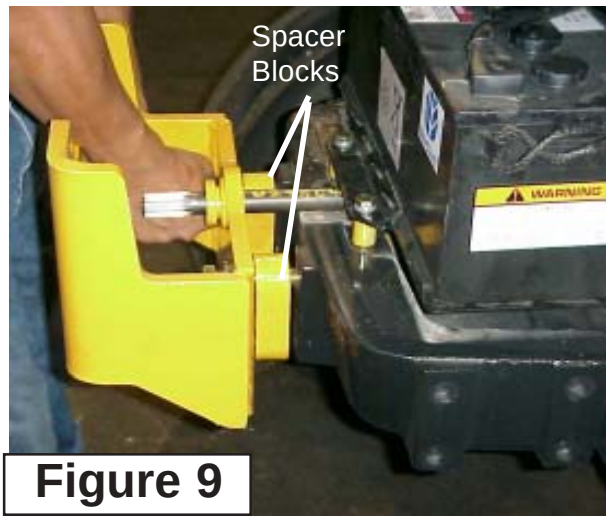

Figure 9

10. Coat the splined end of shaft with anti-seize compound. Coat the end of the shaft with a anti-seize compound (See Figure 11). Do not use an excessive amount and do not use grease.

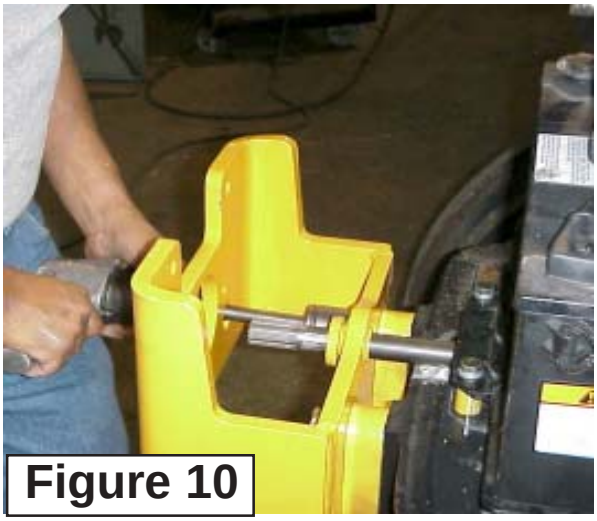
Figure 10

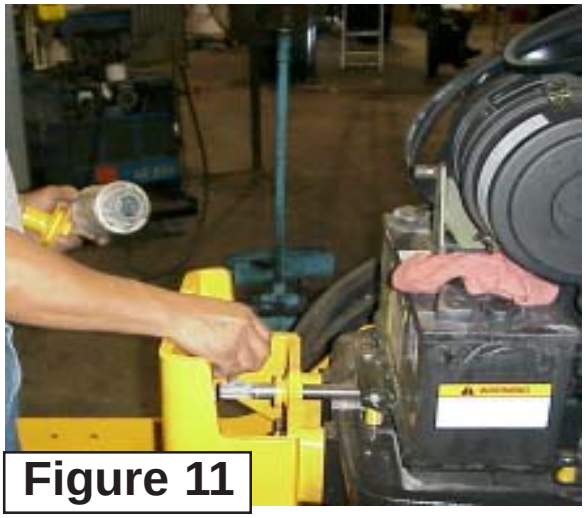
Figure 11

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Driveshaft, Pump & Tank Installation

11. Install Splined Coupler /Pulley Weldment. The Drive belt for the splined Coupler Pulley weldment must be installed at the same time. Note the long end of the splined coupler goes on first. Slide it on until the roll pin that is driven trough the splined coupler is bottom against the driveshaft (See Figure 12).

12. Prepare the Pump for Installation. Coat the splined shaft of the pump with a anti-seize compound. Install the pump shaft into the splined coupler until pump is mount with the flange ring into the pump mount plate (See Figure 13 & 14).

13. Install Pump Retaining bolts. The pump retaining bolts are to be installed by hand. The pump should be seated into the opening provided in the pump mount weldment for the pump flange ring (See Figure 15). Install the two pump mounting bolts and tighten them. DO NOT use the bolts to force pump flange into the pump mount weldment, if you do you will break the flange ears off of the pump. If the pump will not go by pushing it in take the pump out and check the opening for excess paint or burrs. The pump must be installed as shown in figure 14 and 15. The side of the pump with the four fittings will be to the RH side of the tractor when standing behind tractor looking forward.

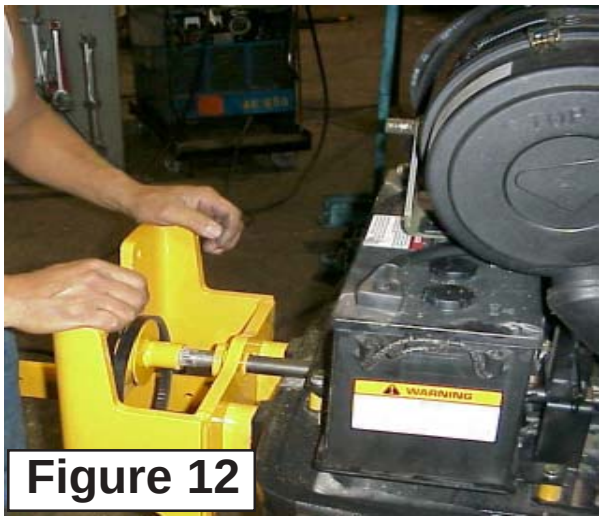

Figure 12

Figure 13

Figure 14

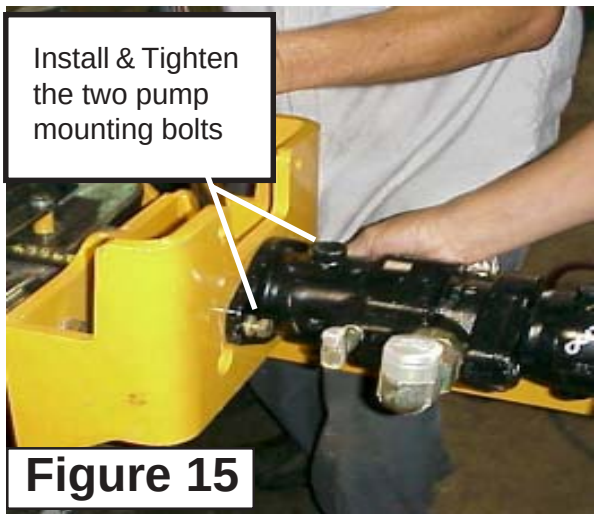

Figure 15

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14. Adjust Splined Coupler/ Pulley Weldment. The splined Coupler Pulley weldment must be adjusted to run in the correct location. Note the long end of the splined coupler goes on first and has a roll pin that is driven trough the splined coupler. Push the pulley outward until the splined coupler is slid as far as it will go onto the Pump Shaft (See Figure 16). Pull the driveshaft out of the crankshaft pulley adapter until it is in the splined coupler / pulley weldment as far as it will go. Tighten the setscrew in the carrier bearing locking collar, this will prevent the drive pulley weldment alignment from moving. Double check to make certain the locking collar is tight against driveshaft. NOTE: If driveshaft is tight and will not slide out to coupler by hand, use a pair of locking grip pliers on the shaft next to the tractor bolster, use a small pry bar between pliers and bolster to slide shaft out of crankshaft pulley and make certain it is into the splined coupler as far as it will go (See Figure 16).

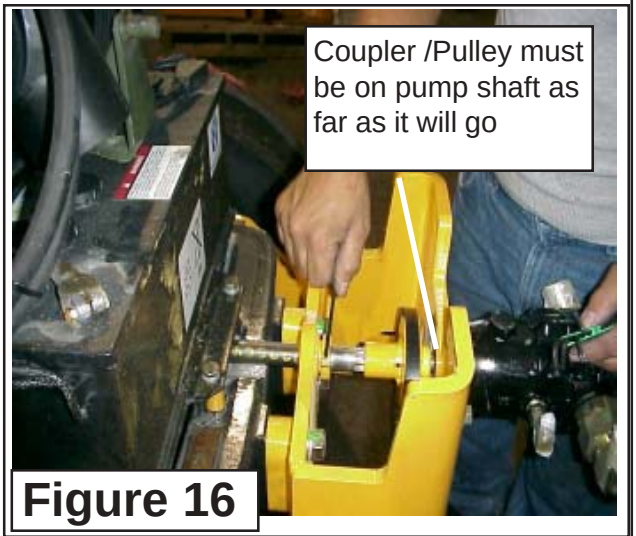

Figure 16

15. Install Small Auxiliary. Pump. The small auxiliary pump mount above the larger pump and is to supply the cylinders with hydraulics. The Drive belt is already installed on the driveshaft pulley. The small pump is mounted on a plate with two mounting holes, one round and one slotted. Set the pump up against the larger pump mount weldment and slip the drive belt over the pulley (See Figure 17). You can insert the retaining bolt into the LH side of small pump mount plate to hold it up but do not install a nut on it. The Belt guard and pump mounting plate uses the same bolts (See Figure 18). Install the belt guard with the bolts through it into the Large Pump Mount Weldment and through the small pump mount plate. Install the two retaining locknuts on the these two bolt but do not tighten them yet.

Figure 17

16. Adjust Drive Belt on Small Auxiliary Pump. The small pump mount plate has a 3/8" square hole that is designed to be used with a 3/8" drive ratchet or breaker bar to adjust the belt. Snug the pump mounting bolts and put a 3/8" drive ratchet into the hole. Pull up until belt has about the same tension as an automotive belt. Tighten the mounting/adjusting bolts (See Figure 19 & 20).

Figure 18

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17. Recheck All Bolts and Components that have been installed. The bolts and components that have been installed should be check before moving on the next step. Make certain that all bolts have been tighten. It is a good practice to mark the bolts and nuts with some mark such as a dab of paint from a paint marker or anyway that you want so you will know that bolt has been tightened.

18. Install Tank Mounting Rails. The tank mounting rails will bolt to the front tractor bolster with four bolts on each side. The Tank Mounting rails will also use a four hole spacer that is between the mounting rails and the tractor bolster. The LH and Right hand will be the same and both must have the spacer plate installed. (See Figure 21 & 22). DO NOT tighten the four mounting bolts for the tank mount rails as these need to be loose to make it easier to install the hydraulic tank.

19. Install Tank. The hydraulic tank is bolted between the two tank mounting rails (See Figure 23). Start the bolts through the tank rails and tank on the LH and RH side but do not tighten them. Install the front Bumper weldment between the tank rails in the front. Now the bolts can be tightened once all have been installed. See Figure 23 and tighten the bolts as shown on one side. 1 the tank rail bolts to bolster. 2 the front bumper bolts. 3 the tank to rail bolts. Then tighten the bolts on the other side in the same order, this will allow the tank to center itself.

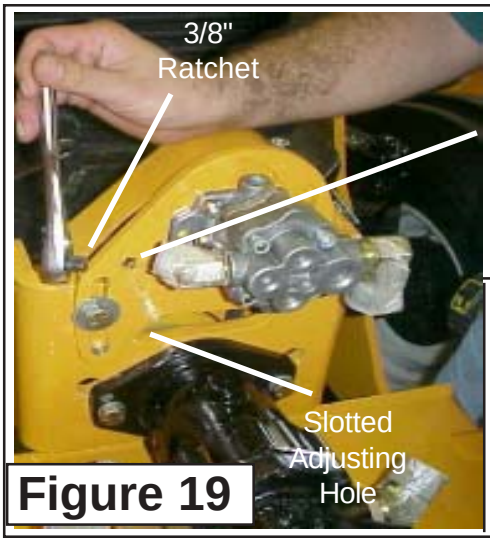

Figure 19

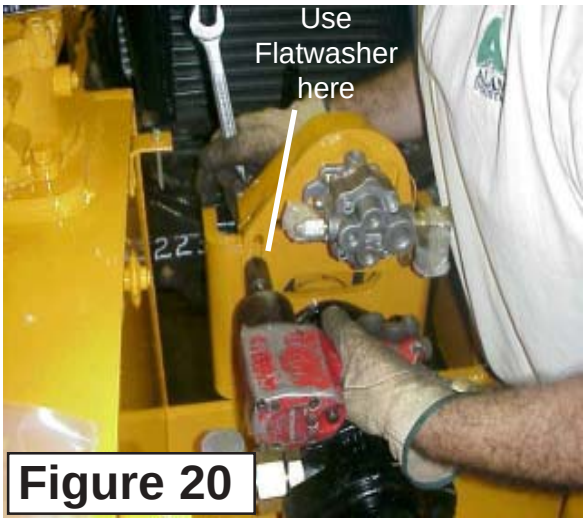

Figure 20

Figure 21

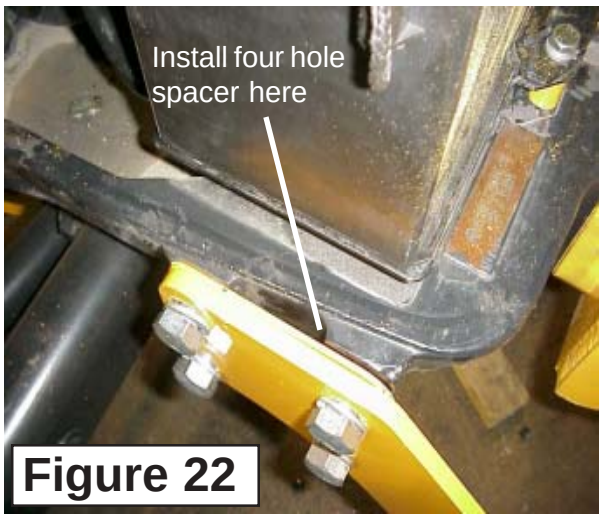

Figure 22

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Driveshaft, Pump & Tank Installation

20. Prepare Tandem Pump Fittings The Tandem Pump will need to be prepared for connecting the hoses. There are fittings that must be changed. The Fittings in the tandem pump should already be installed when you receive it from the factory (See Figure 25). The Pressure Out Port to LH Wing from outer Tandem half of pump straight out fitting will need to be change to a 90 degree elbow fitting (See Figure 25). The Two large caps on the tank suction ports will need to be replaced with two elbow fittings and hose barbs (See Figure 25, 26 & 27). Coat the fittings that screw into pumps and tank with a pipe sealer (NOT Teflon Tape), do not put excess sealer on OD of fittings and none on ID of fittings (See Figure 26). Install the elbow fitting into the pressure port of the LH Motor Pump (outer pump on tandem pump) with the supplied elbow (See Figure 27)

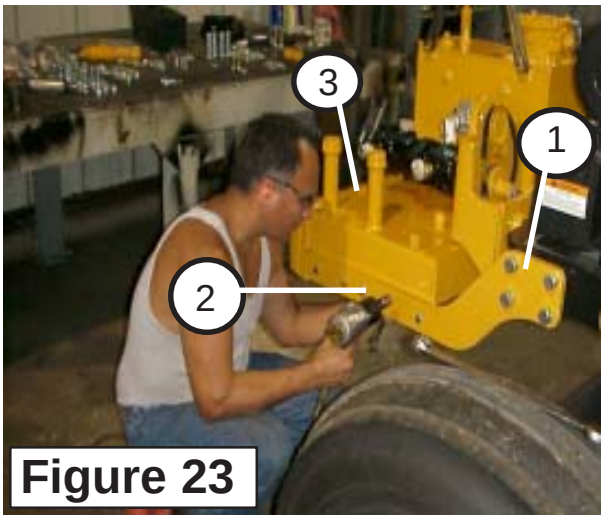


Figure 23

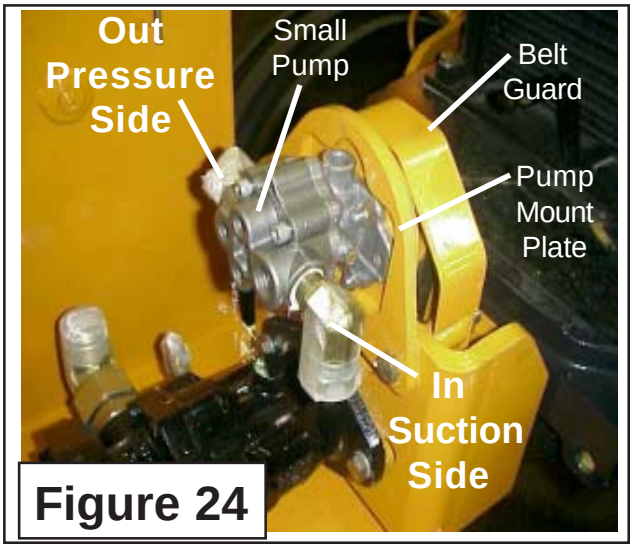
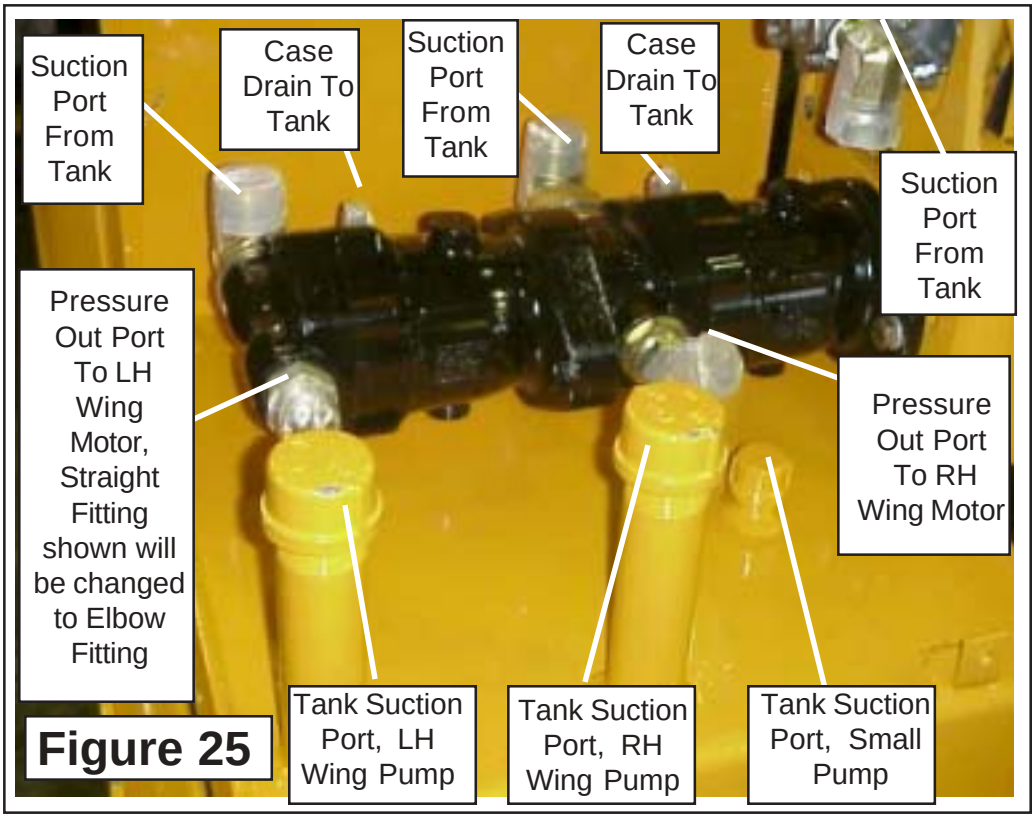


Figure 24

21. The small cylinder hydraulic Supply Pump will have a short hose that connects to the small pump and to the tank suction port that is in the tank exclusively for the small pump. The suction hose will need cut to length. make certain suction hose is not kinked. (See Figure 24 & 25) which shows these ports. Make certain the Elbow (pressure port of outer tandem pump (See Figure 27) is installed and tightened pointing to the rear of the pump.


Suction Port From Tank
Case Drain To Tank
Suction Port From Tank
Case Drain To Tank
Suction Port From Tank
Pressure Out Port To LH Wing Motor, Straight Fitting shown will be changed to Elbow Fitting
Pressure Out Port To RH Wing Motor
Tank Suction Port, LH Wing Pump
Tank Suction Port, RH Wing Pump
Tank Suction Port, Small Pump
Figure 25

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22. Connect Motor Pressure Supply Hoses to Pump. The Tandem Pump has two pressure hoses. The Rear (closest to Tractor Engine) it the supply for the RH Wing Motor. The Outer Pump is the LH Wing Motor Pressure Supply. The hose for the RH Wing should be marked with a red plastic tie on it, the other hose is not Identified. Connect these two hoses at the pump now (See Figure 28)

23. Connect Pump Suction Hoses. The Case drain hoses should already be connected, if not connect them now. Hoses & Fittings with Pipe thread will need a thread sealer used (do not use excess sealer and no sealer on ID of fittings). The Tandem Pump Suction hoses will be sent longer than needed and will need to be cut to fit, DO NOT install any suction hoses with kinks in them. Kinked hoses could starve pump of oil.. (See Figure 29). The Aux. Pump Suction hose will need to be connected now (See Figure 29).

24. Cover Pressure Hoses with Sleeving. The two pressure hoses will be run through the hose retaining ring that will be bolted to the side of mainframe mounting brackets later, slide the hose sleeving up over the pressure hoses . Slide sleeving up until it is about 2 inches past the edge of the hydraulic tank. Leave the hose fittings loose at the Pump for now as you may have to take them off later to insert hoses through the hose ring and down the side of the frame/

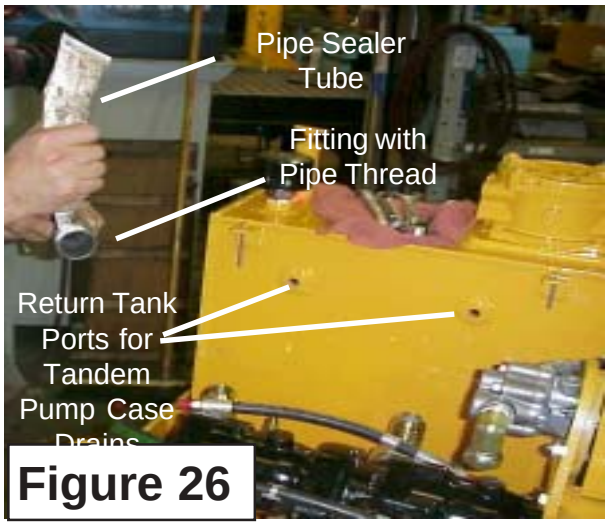
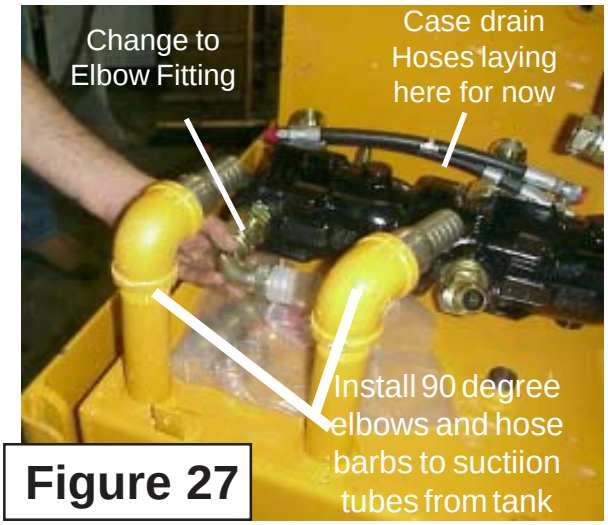


Figure 26


Change to Elbow Fitting
Case drain Hoses laying here for now
Install 90 degree elbows and hose barbs to suctiion tubes from tank
Figure 27

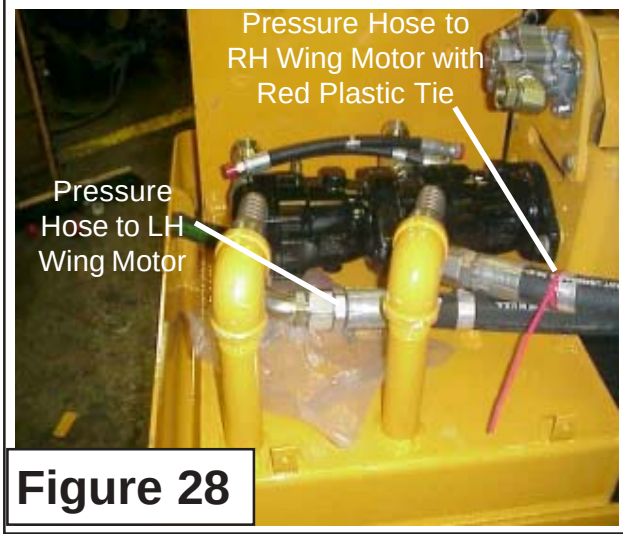


Figure 28

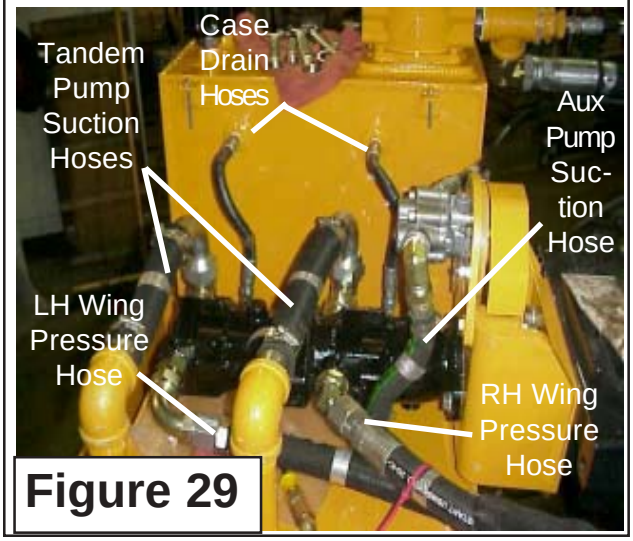


Figure 29

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25. Install Hose Fittings into Return Filter in Tank. There is a return filter in the top of the RH side of tank. In the end of the filter housing install a Tee Fitting with an Elbow in it. In the end of the Tee there will be reducer to allow the installing of a smaller hose. This reducer is where the return hose from the control valve will connect (See Figure 30 & 31).

26. Install Return Filter Pressure Gauge. The return filter pressure gauge screws into the side of the return filter housing. This gauge is a low pressure gauge that is marked in green and red areas. (See Figure 31). The Oil Pressure return gauge has a rubbery tip on top of it, the tip till have to have the tip of it cutoff. Using a utility knife (or suitable knife) cut the tip off now (See Figure 32). This will need to be done before unit is run.

27. Install the Oil Level Sight Glass. The Oil Level sight Glass screws into the Hydraulic tank. This is to covered with oil when tank is a at operating level. (See Figure 30 & 31)

28. Install the small pump pressure hose to pump. The pressure hose connects to the RH side of the small pump and is run down the RH side of the frame with the return hoses (See Figure 33)

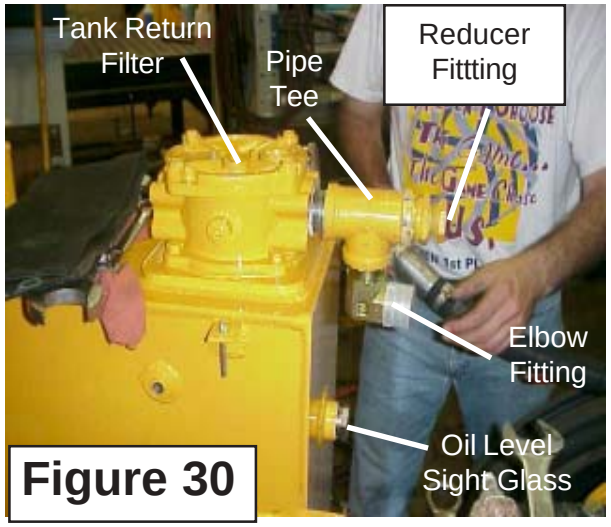
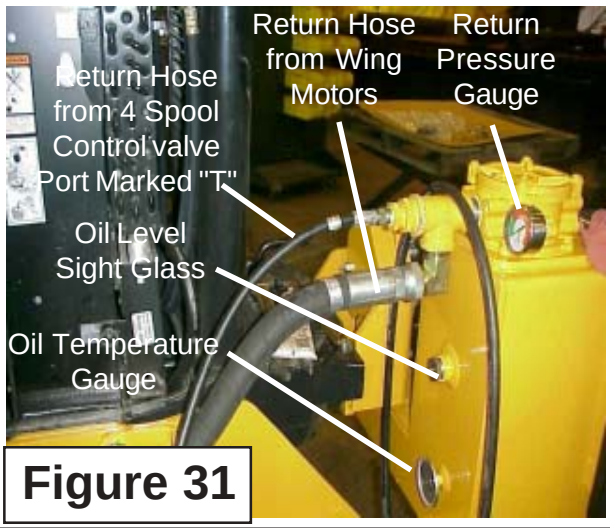


Figure 30


Return Hose from 4 Spool Control valve Port Marked "T"
Return Hose from Wing Motors
Return Pressure Gauge
Oil Level Sight Glass
Oil Temperature Gauge
Figure 31

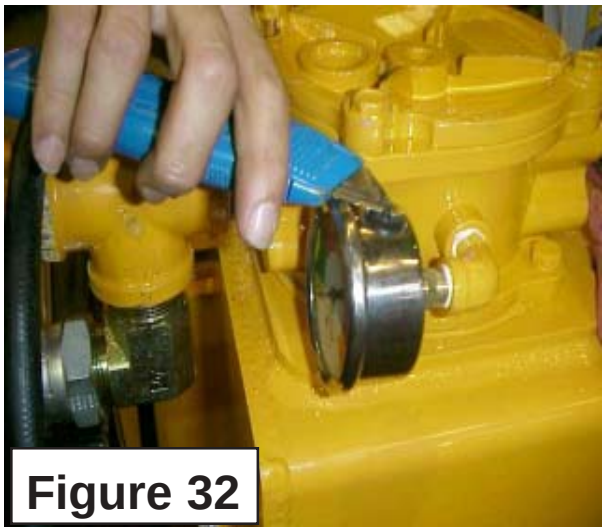


Figure 32

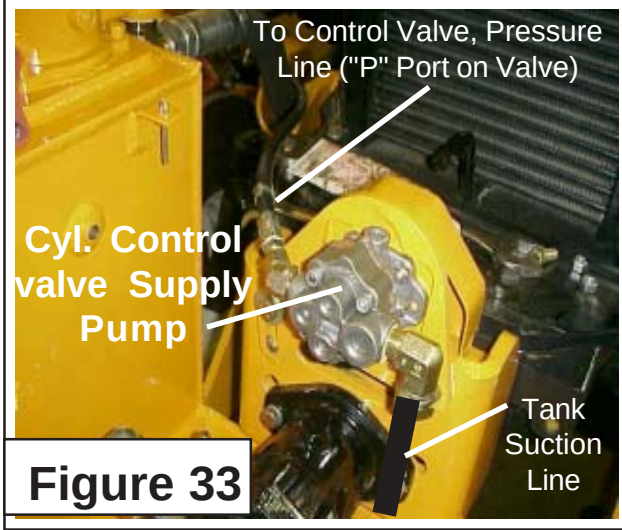


Figure 33

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NOTES

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Section 3

INTERSTATER

Fuel Tank Modification

New Holland TL-100 Tractor

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Manufactured Fuel Tank Installation

Tractor Fuel Tank Replacement:

1. Remove the New Holland Factory Fuel Tank From Tractor. Drain all the fuel from the fuel tank with an approved pump or other device. Store fuel in an approved area. Remove the factory fuel tank. It is somewhat easier if the left rear tire & wheel are removed but it is not required. Some Tractors come with an optional Fuel Tank Protection Plate under tank, if you have this plate it will not be used with the Alamo Industrial replacement tank. (See Figure 1).

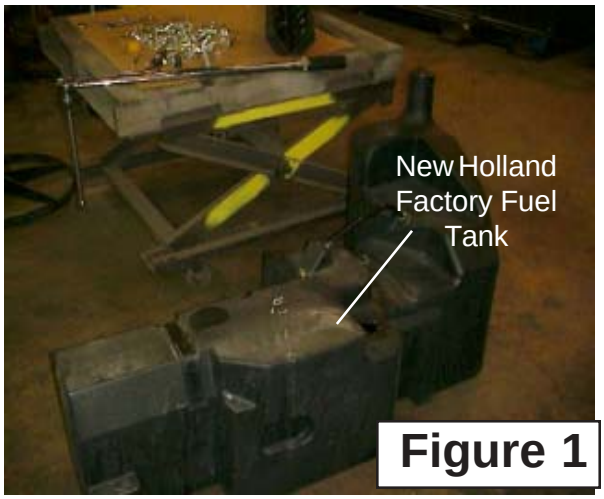

Figure 1

2. Remove the fuel sending unit from the factory tank. The factory fuel sending unit for the fuel level gauge will be reused, it will bolt into the replacement tank with out any modifications (See Figure 3). Note the replacement tank will come to you all ready painted but it may require touching up after mounting.

3. Install New Fuel Tank. The replacement fuel tank will install with the new straps supplied from Alamo Industrial. The is a Step Weldment that will bolt to the fuel tank to tank the place of the factory step that had to be removed.

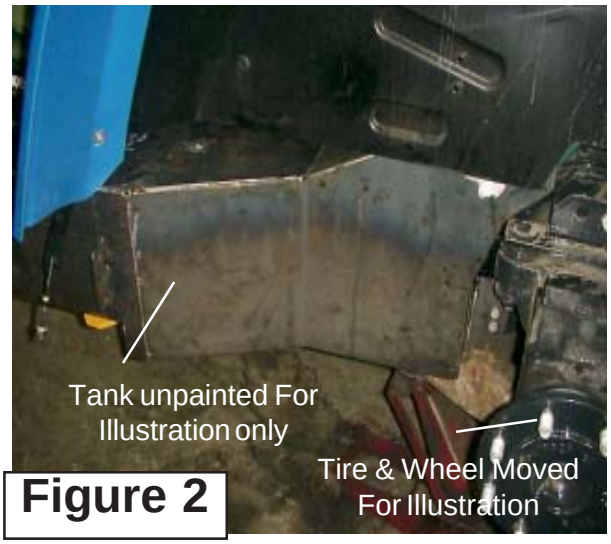

Figure 2

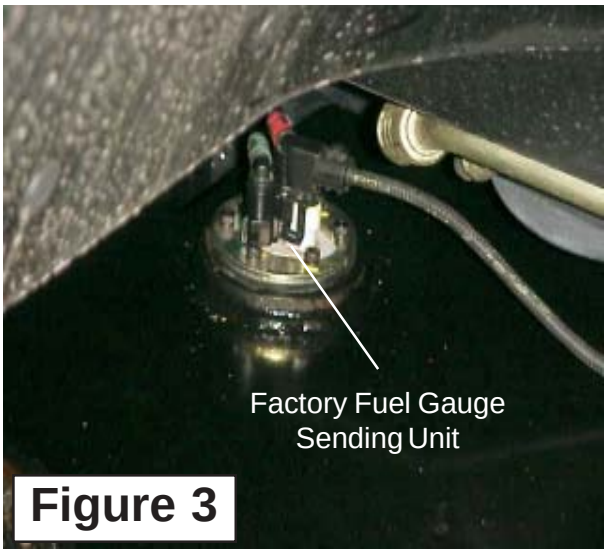

Figure 3

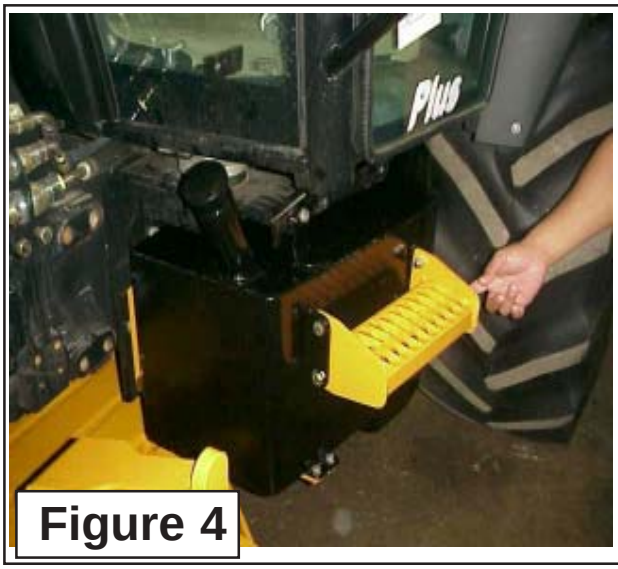

Figure 4

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Section 4

INTERSTATER

Mainframe Installation

New Holland
TL-100 Tractor

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Main Frame Dual / Single Wing

Install Main:

1. Remove Components from Tractor. There are items that must be removed from tractor that will not be used before the mainframe can be mounted. The steps on the left and right side has to be removed. (See Figure 1 & 2) The Tractors Draw Bar and draw Bar Mounting bracket will have to be removed (See Figure 3) . Before beginning any work on Tractor the Negative Ground Battery cable needs to be disconnected from the battery to protect the electrical system. Before reconnecting Battery cable check all connections that you have made and make certain all components of the tractor are in the OFF position.

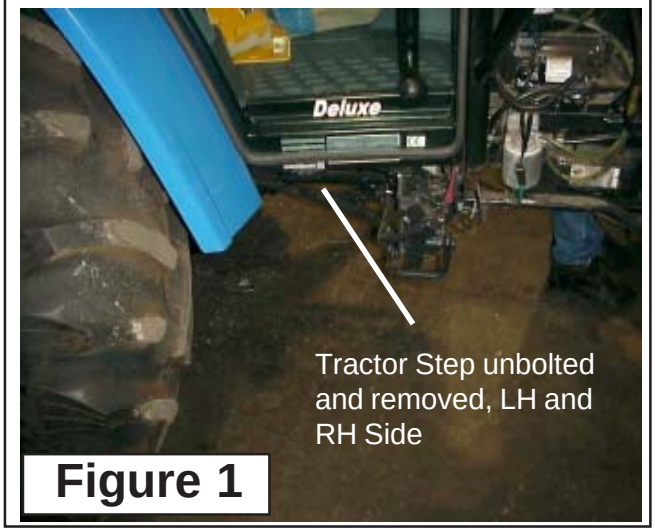

Figure 1

2. Install Front Frame Mounting Brackets. The front Mainframe Mounting Brackets has a right and left side Bracket (See Figure 4). The Hose Ring will also be bolted on with these brackets. The holes in the mounting brackets are slotted, use a hardened flatwasher on the back hole. The front hole will not need flat washer as the hose ring bolts there. The bolt in front with the hose ring will be longer than the bolt used in the back hole (See Figure 5). Install the RH bracket same as the LH hand bracket as shown. DO NOT tighten the bracket mounting bolts as these bracket will have to be left loose so they will be free to align when the mainframe is bolt up to them later.

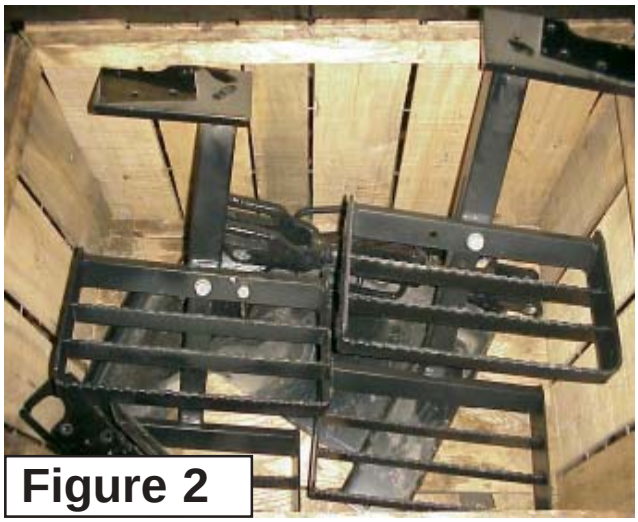
Figure 2

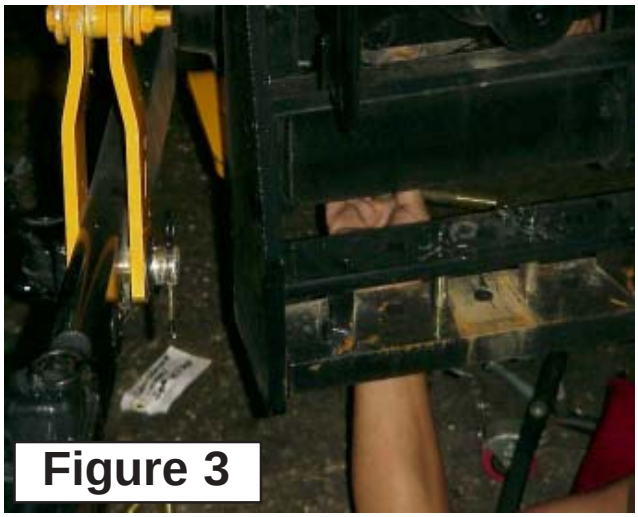
Figure 3

Figure 4

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Main Frame Dual / Single Wing

3. Install The Main frame under Tractor. The Main frame will be bolted up under the tractor at the rear of the tractor and to the frame support rails at front. Align the mainframe up on the floor behind the tractor (See Figure 6 & 7) . Use a fork lift to push the frame in under the tractor from the rear, mounting the main frame is a two man procedure. Push the mainframe under the tractor until the front of it is aligned with the front frame mounting brackets (See Figure 8). At the rear of the mainframe there is a plate that has six bolt holes in it. These six holes are used to bolt the rear of the frame to the rear axle of the tractor and will be the first bolts installed into the mainframe (See Figure 9).

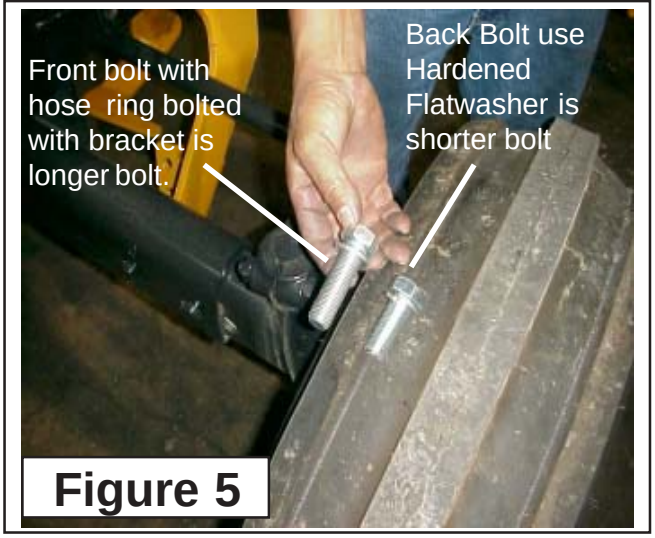

Figure 5

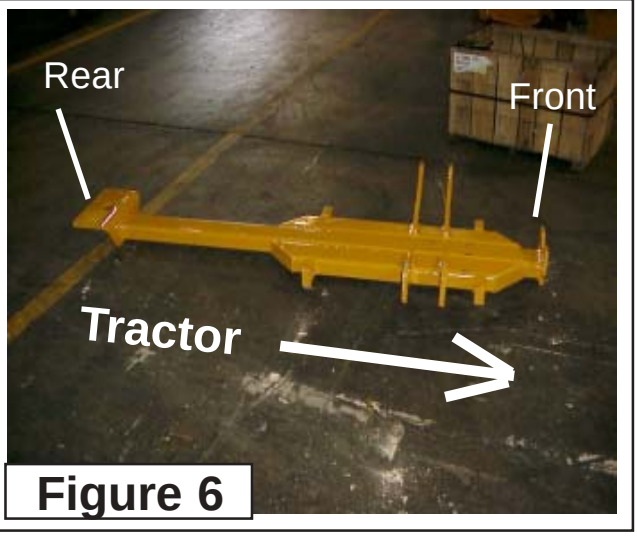

Figure 6

Figure 7

Figure 8

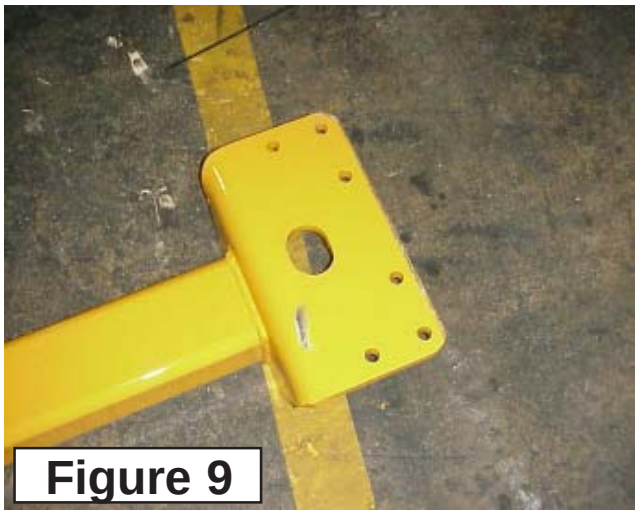
Figure 9

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4. Install The Rear Mainframe Mounting Bolts. There are six long bolts to mount the rear of the mainframe to the rear of the tractor axle housing (See Figure 10). Note some holes in tractor housing may have plastic plugs in the tractor housing, these will need to be removed before installing main frame. You will need to lift the mainframe up under the tractor. There are two ways to do this, with a fork lift from the side of the tractor or with the main frame balanced on a floor jack. From the under side of tractor install the six mounting bolts, the main frame will bolt up to the axle housing where the draw bar mount was bolted. Tighten these six bolt now (See Figure 11).

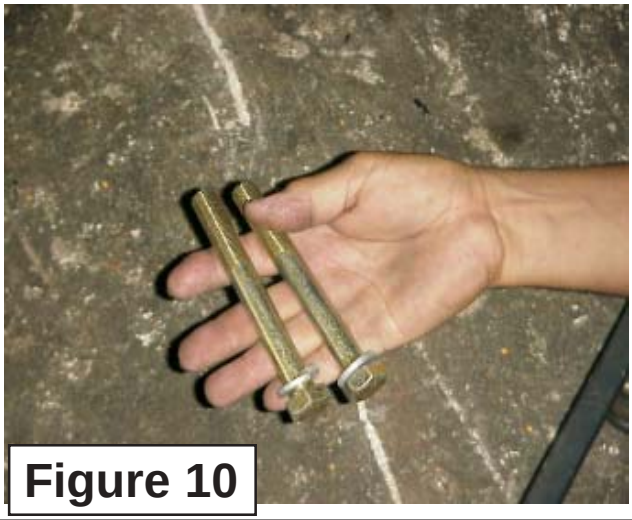

Figure 10

5. Install the bolts and nuts in the front of the main frame. There are two bolts on each side that attaches the mainframe to the front mounting brackets (See Figure 12). Using floor jack or fork lift frame until the holes in the front of the mainframe align with the holes in the mounting brackets (See Figure 13). As seen in figure 13 there is a gap between the mainframe and mounting brackets, this is not unusual. The bolts in the mounting bracket at the tractor bolster should be loose, this will allow them to slide on the slotted holes so they will pull back to the main frame. (See Figure 13). Install the four mounting bolts and locknuts, two on each side and tighten them now (See Item 14). After tightened the gap between the mainframe and mounting brackets should not be there. (See Item 14).

Figure 11

Figure 12

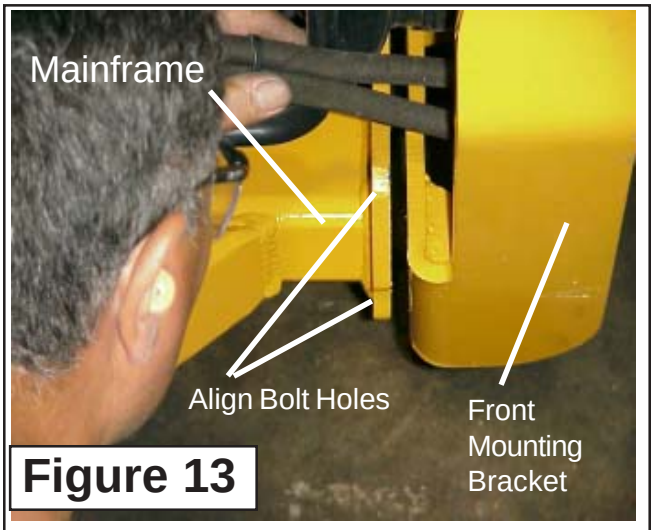

Figure 13

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6. Tighten the front Mounting Brackets. There are two bolts on each side for the front mounting brackets. These brackets have slotted holes in them and should have aligned them selves as the other bolts were tightened. When you tighten the front bolt you will need to hold the hose ring so that it is mounted correctly (See Figure 16).

7. Check Tractor Power Steering Hoses. The tractor power steering hoses run down the left hand side of the engine. These hoses are very close to the mainframe where they connect to the front axle. To prevent these hoses from rubbing on the Interstater Mainframe loosen the hose retaining clamp on the engine (See Figure 17 & 18). Slide the hoses upward in the clamp and retighten the clamp, this will move the hoses where they will not rub on mainframe.

Figure 14

Figure 15

Figure 16

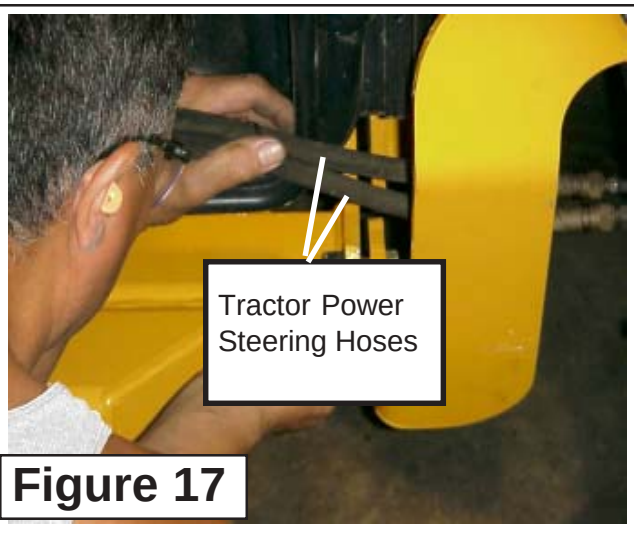

Figure 17

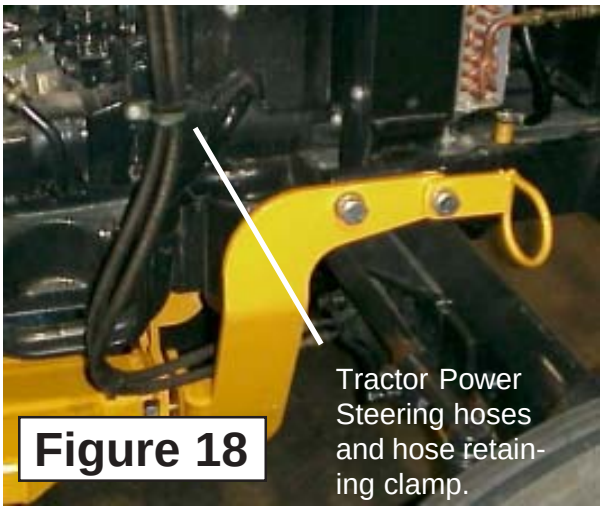

Figure 18

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8. Install RH Wing Lift frame. The wing lift frame pivots on two hinge pins. When installing these pins they must be aligned in a way that will allow the retaining bolt to be installed. The Right side and the Left side will install in the same way (See Figure 19 & 20)

9. Install Lift Cylinder Mount Weldment. The lift cylinder mount is a bolt on weldment that bolts to the main frame with four bolts. The Left Hand and the right hand are not the same. The right hand side will have a mount welded to it to mount the control valve to (See Figure 19), the left hand mount will not have this plate welded to it. The LH & RH will bolt on the same way. Tighten the mounting bolts. Note the bracket also has the transport lugs welded to them.

10. Install The Hydraulic Tube Asy. The Hydraulic tube assembly on the older units was bolted to the main frame, but this has been changed to a weld on part. The Bracket will come with the tubes installed in it, so caution will need to be taken when welding it on. Align the bracket with the Frame and Lift frame (See Figure 20 & 21). You will need to weld this in four places, 2 on each side, each weld should be about 3" long (See Figure 22). IMPORTANT that the cross over tube bracket be mounted correctly as shown (Figures 20,21 & 22), the side with three connections on it will be on the right hand side.

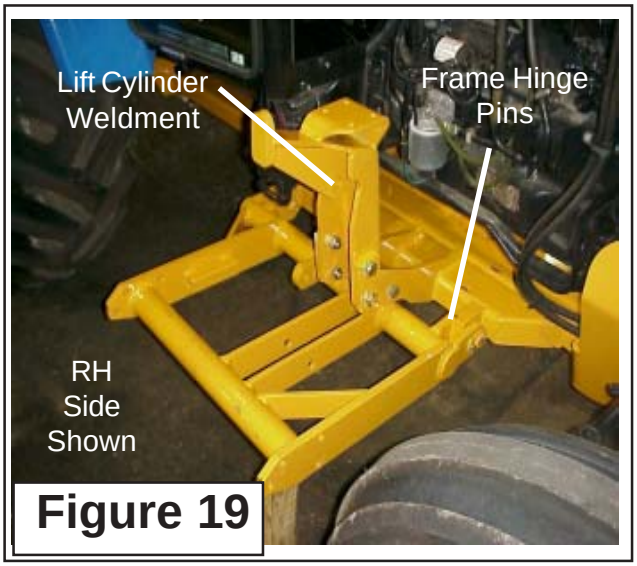


Figure 19

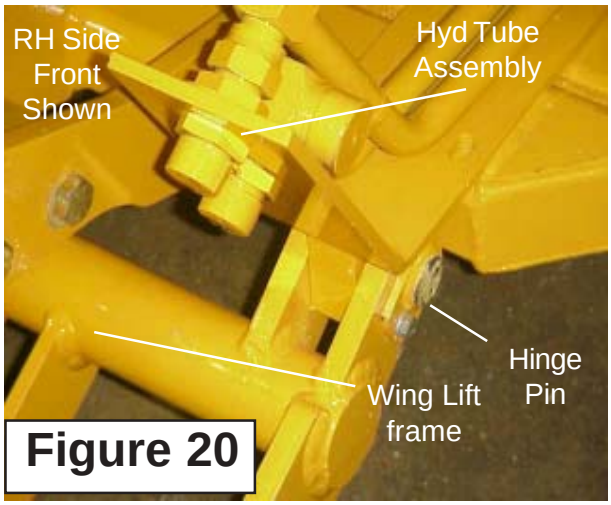
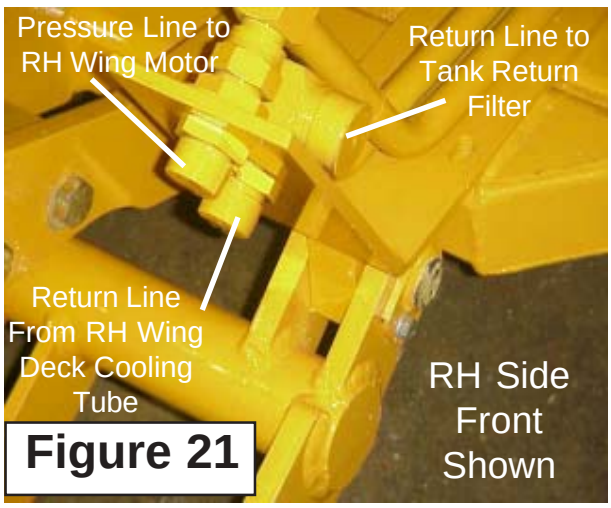


Figure 20


Pressure Line to RH Wing Motor
Return Line to Tank Return Filter
Return Line From RH Wing Deck Cooling Tube
RH Side Front Shown
Figure 21

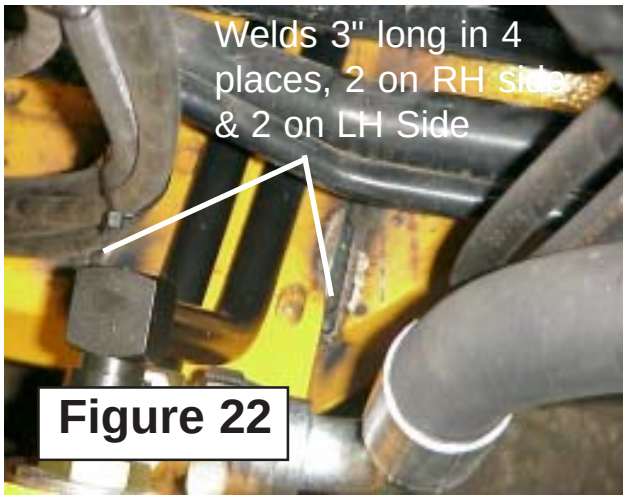


Figure 22

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11. Install the Lift and Tilt Cylinders. Install the Lift cylinder and the Tilt Cylinder. When installing these they must be installed with the rod end clevis grease fitting facing up and out (See Figure 23 & 24). The Cylinder for the Left Wing will install the same as the RH side. Do not remove any shipping plugs from cylinders or hoses until you are ready to install the hoses, this will keep the system and components clean while unit is being assembled.

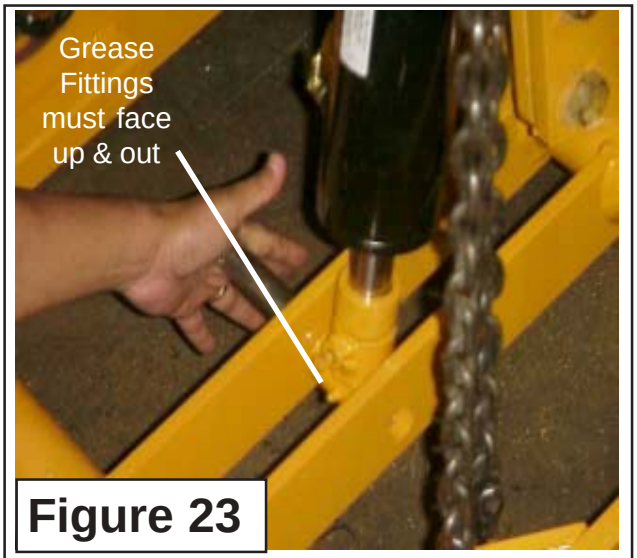

Figure 23

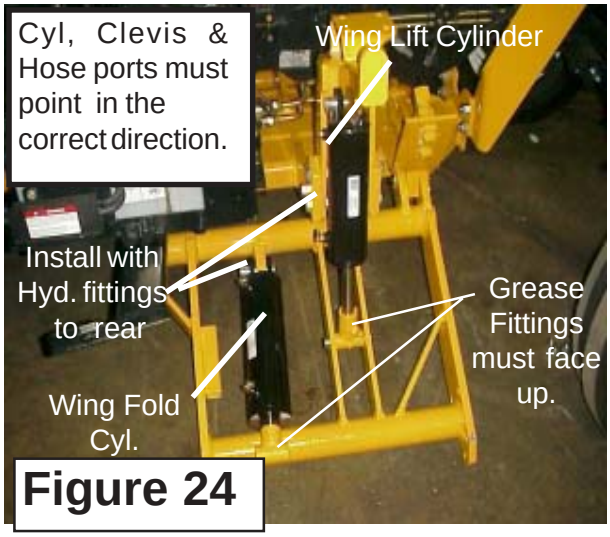
Cyl, Clevis & Hose ports must point in the correct direction.
Wing Lift Cylinder
Install with Hyd. fittings to rear
Wing Fold Cyl.
Grease Fittings must face up.

Figure 24

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NOTES

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Section 5

INTERSTATER

Wing Mower Installation

New Holland
TL-100 Tractor

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Wing Mower Installation

Wing Cut Off Switch:

1. Assemble Brackets & Magnetic Switches. Locate the Magnetic switch mounting bracket, dual wings there will be two of these (See Figure 1). If Dual wings the two brackets will have the switches mounted on the opposite side (See Figure 2). Once these have the switches bolted on lay the brackets aside for now. (See Figure 20)

2. Assemble Magnetic Switch Activators. This magnetic switch activator has a magnet inside and a cover that must be installed (See Figure 4). There are brackets that these bolt to. With dual wings there is a LH and RH bracket. Bolt the Magnetic activators to the brackets (See Figure 5) LH Bracket Shown). Note there are two sets of mounting holes. In figure 5 the set that have the bolts through them is used to shut wing off at 45 degree up. If the other set of holes are used wing mower will shut off at 90 degrees up. The 45 degree setting is recommended for standard applications.

3. Install Switch Brackets & Head Mounting Brackets. Use a hoist to lift the Wing Mower and position it for mounting. DO NOT get under Mower while lifted on a hoist (See Figure 6). Mower is only be positions so that switch brackets and hinge brackets can be installed to head, this must be done before mower can be mounted to lift frame.

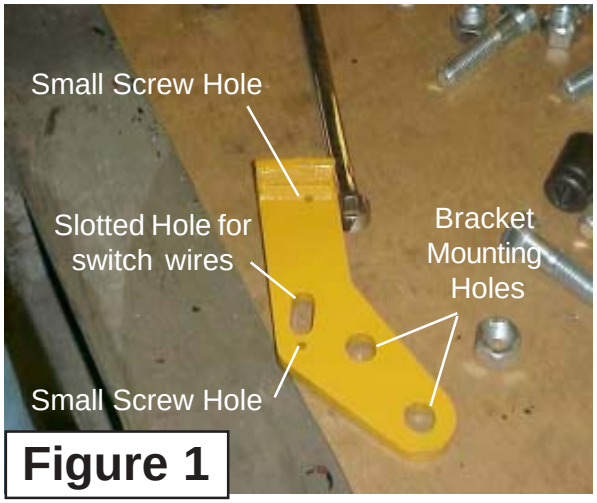

Figure 1

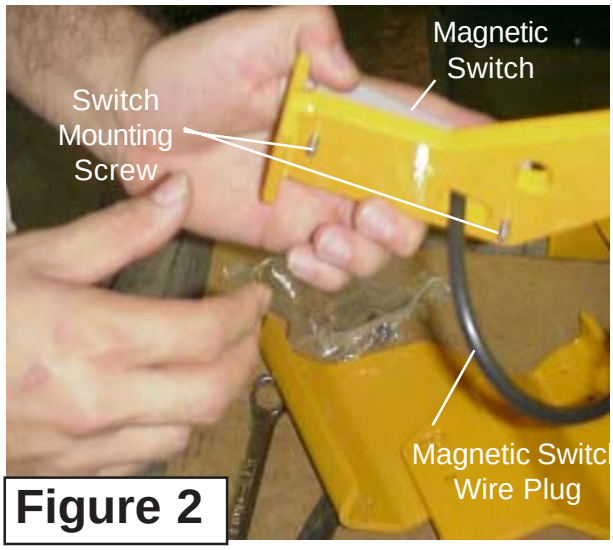

Figure 2

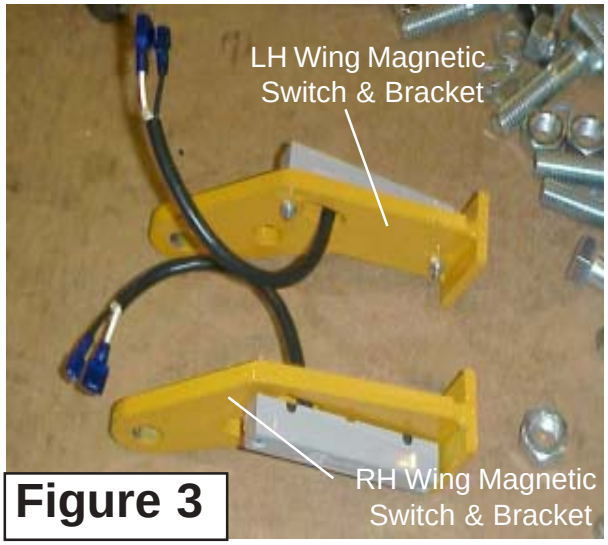

Figure 3

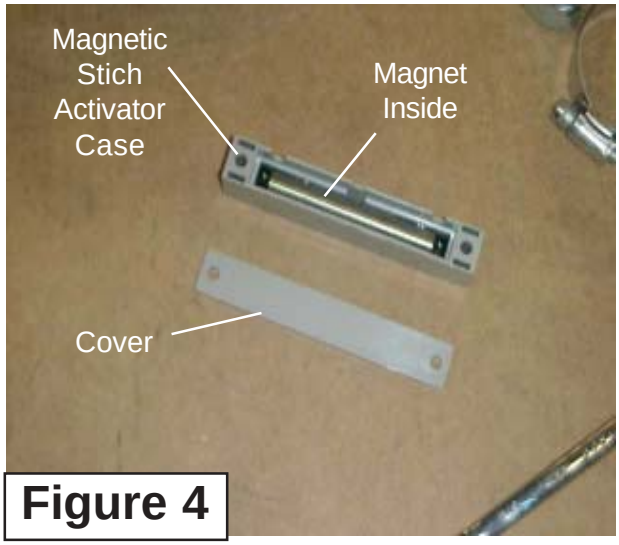

Figure 4

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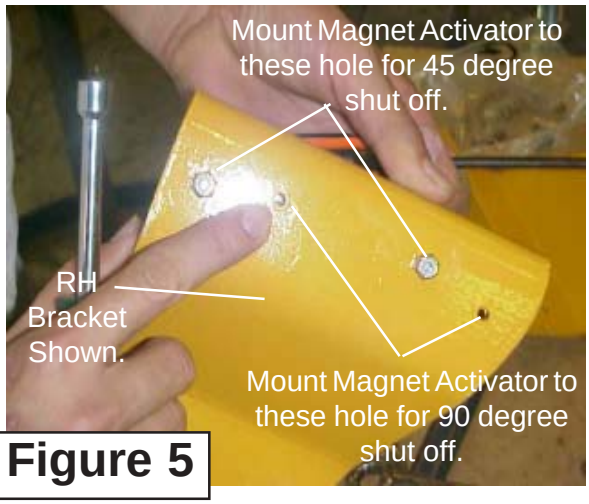
Wing Cut Off Switch: (continued)

4. Install Mower Rear Mounting Brackets & Magnetic Switches. The Mower Hinge Link has a LH & RH (See Figure 7). These brackets will slide over the Hinge Pin which is bolted to the mower deck at the factory. There are two Threaded holes in the end of the hinge pin (See Figure 7) These two holes serve dual purpose. First they hole the hinge bracket on and the Magnetic Activator Bracket on. Some times you will need to loosen the Hinge pin to align the two holes so the bracket will bolt on. (See Figure 8 & 9). Tighten the two mounting bolts in to the hinge pin. The Hinge bracket will still turn free.


Mount Magnet Activator to these hole for 45 degree shut off.
RH Bracket Shown.
Mount Magnet Activator to these hole for 90 degree shut off.
Figure 5

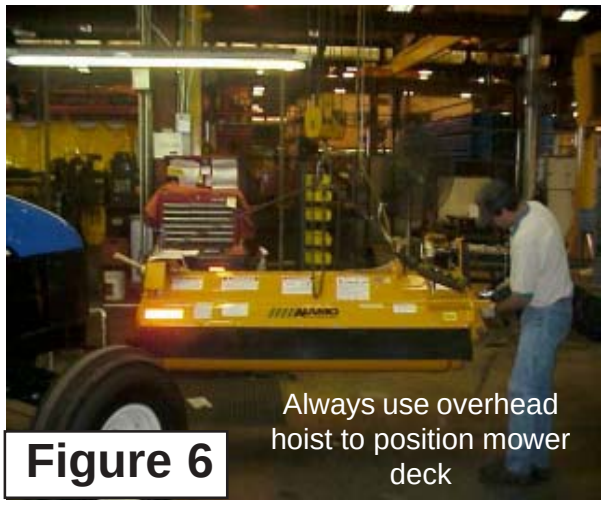


Figure 6

Figure 7

Figure 8

Figure 9

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Wing Cut Off Switch: (continued)

5. Install Mower Front Mounting Brackets. The Mower Hinge Front Bracket has a has a LH & RH (See Figure 10). These brackets will slide over the Hinge Pin which is bolted to the mower deck at the factory. This bracket will be bolted to the Lift frame with four bolts. This hinge Pin WILL NOT have threaded holes as the rear hinge pin did.

6. Install Wing Mower to Lift Frame. Using the over head hoist position the Mower Deck (See Figure 10) to where the front hinge bracket will align with the lift frame. Install at least two of the mounting bolts and snug them down.

7. Install the wire harness to wings. The Wire harness will have a lead to each wing. These can be determined by the length, the longer lead will go to the left wing. There is apiece of square tube welded to the lift frame on the back for the wire harness to be run through (See Figure 11). The wire harness will be run down and under the round bar of lift frame. Leave harness here for now.

8. Install Magnetic Switch Pickup & Bracket as well as the rear hinge bracket. The Rear hinge Bracket will install similar to the way the front does, but not the same because the Magnetic switches and brackets bolt on with it. Before installing the rear Hinge bracket locate the magnetic Switch Bracket (See Figure 12). There are two spacers about 3/4" long that must be installed between the magnetic switch bracket and the hinge Bracket (See Figure 12), Also the wire harness must be run between these two spacers and between these two brackets (See Figure 13 & 14). Install the remaining two bolts and tighten all the hinge bracket bolts, this will include the front hinge bracket bolts. (See Figure 21)

9. Plug Magnetic Switch into Wire Harness. The wire harness should have a plug that aligns with the magnetic switch wire. Plug these together now and continued to run wire harness up behind the hinge and on up to the mower decks motor. (See Figure 21)

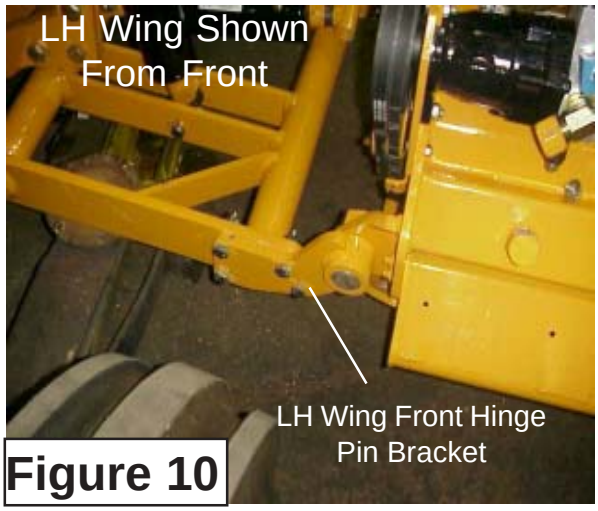

Figure 10

Figure 11

Figure 12

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Wing Cut Off Switch: (continued)

10. Connect Tilt Cylinder to Mower Deck. The Tilt Cylinder connects to the mower head (See Figure 15 & 16). Note you will need to remove the belt guard to connect this cylinder so you will have room for the cylinder mounting pin to be installed (See Figure 16). When connecting the cylinder the grease fitting on the rod end must face up, the locking collar on the cylinder must face up and be tightened on rod end. The RH Wing and the LH Wing will mount the same. Install the RH wing the same as the LH wing . Reinstall Belt Guard.

11. Install Wire Harness to Motor Solenoid. The thumb nut on top of the solenoid will allow the solenoid to be turned to different direction if needed. (See Figure 17 & 21)

Figure 13

Figure 14

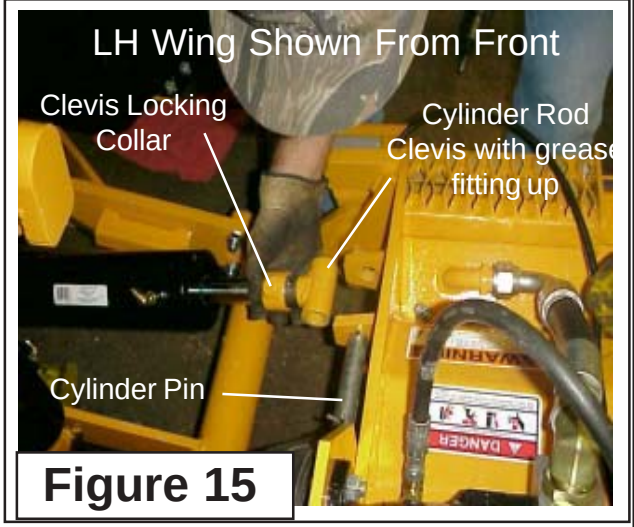

Figure 15

Figure 16

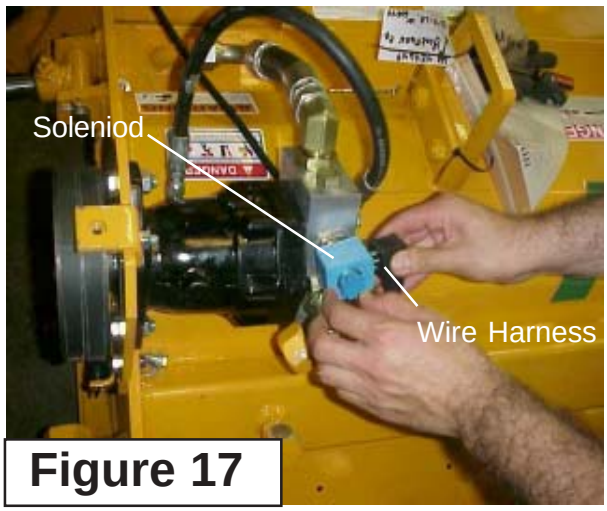

Figure 17

Wing Mower Installation

Connecting Mower Motor Hoses:

1. Connect Motor Pressure & Return Hoses to Mower Deck. Connecting the Motor Hoses is very critical that they a re connected to the correct fittings, If these hose are connected backwards it will damage the cooling tubes on the deck, the cooling tubes cannot take the pressure it will make them swell up and bulge.

IMPORTANT FACT. When connecting the hoses to the fittings on the mainframe crossmember remember the top hose is always thew pressure hose and will only connect to the motor, never the cooling tubes on the deck. The bottom hoses are the return hoses and will always connect to the cooling tubes on the mower deck. (See Figure 18 & 19). The RH wing will connect the same as the LH mower (Shown). IMPORTANT. On the RH Wing the top hose is pressure and connect to the Motor and the bottom hose connects to the Tank return.

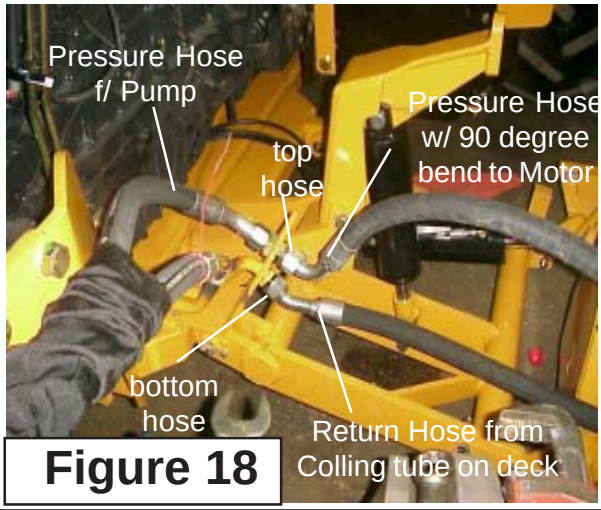

Figure 18

2. Double Check all Hose Connections. Before operating the mower make certain all hydraulic hoses are connected correctly. IT IS MOST critical that you make certain NO HIGH PRESSURE hoses are connected to the wet tubes of the mower deck, The wet tubes will expand (swell up) and be damage if the High Pressure hose is connected to the deck wet (cooling) tubes. See Figure 21, 22, 23, 24, 25, 26 & 27. Looking at all these figure before going on to next step is important.

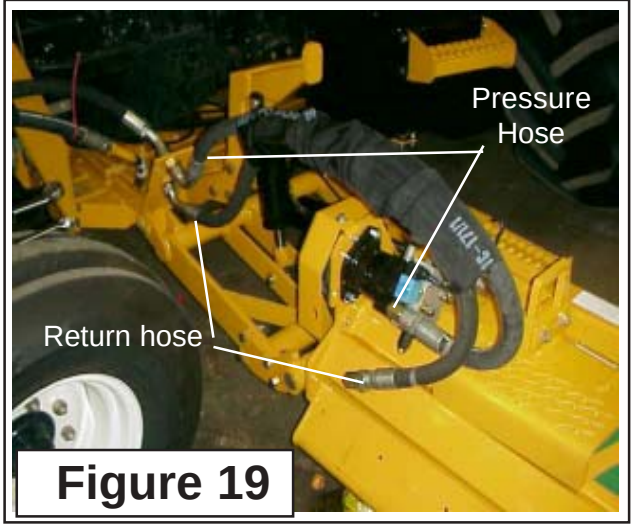

Figure 19

3. Install Pump Cover. The front pump cover will bolt to the tank, this cover will cover pumps and all hoses and/or fittings connected to the pump (See Figure 20). Set the cover down over the pumps. Align the hove in cover with the tabs welded to the tank (See Figure 20).

Figure 20

4. Install Rear Mower. Go on to the Install rear mower section which will also include the Initial Start up procedures. DO NOT START Tractor until you have completed the initial start up section.

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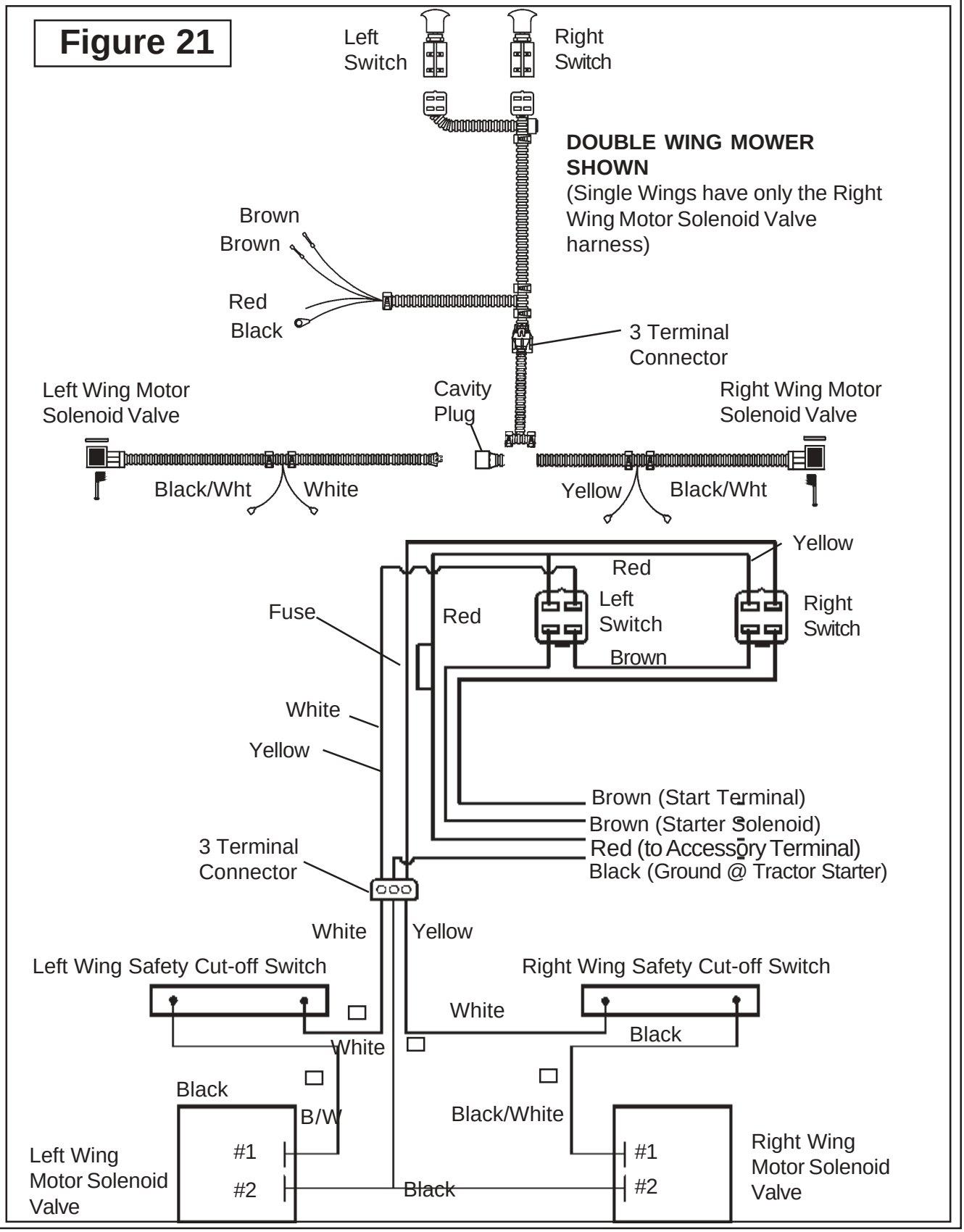
Wiring Schematic



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Pump & Motor Hydraulic Schematic

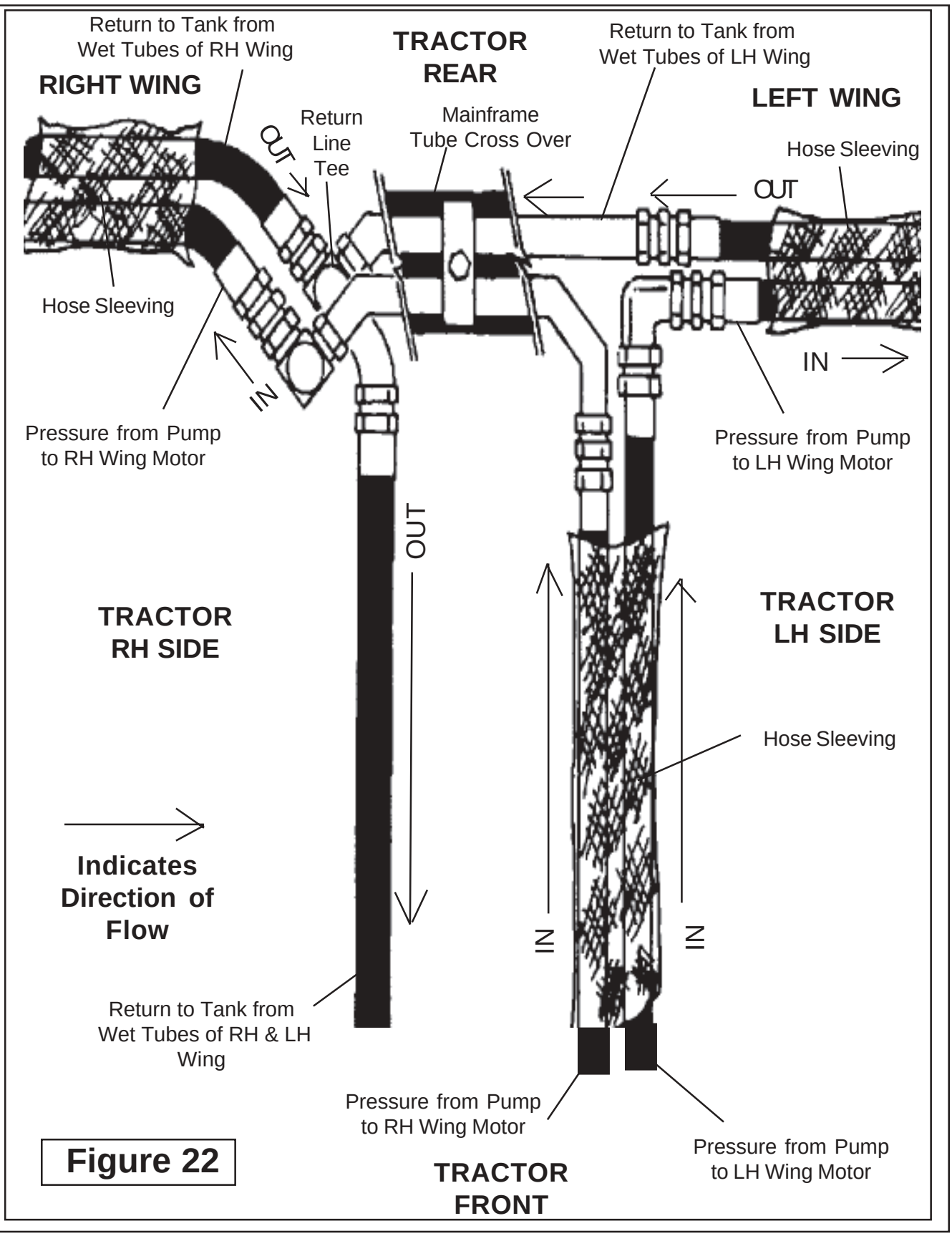

Figure 22

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Pump & Motor Hydraulic Schematic

LEFT WING HYDRAULIC MOTOR SHOWN

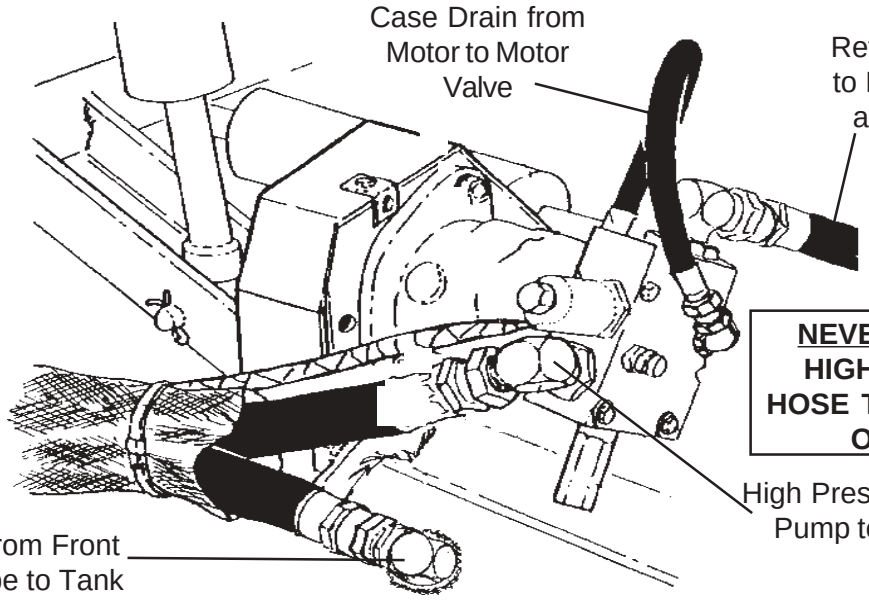
Case Drain from Motor to Motor Valve
Return from Motor to Rear Wet Tube and on to Tank
NEVER CONNECT HIGH PRESSURE HOSE TO WET TUBES ON DECK !
High Pressure from Pump to Motor
Return from Front Wet Tube to Tank

Figure 23

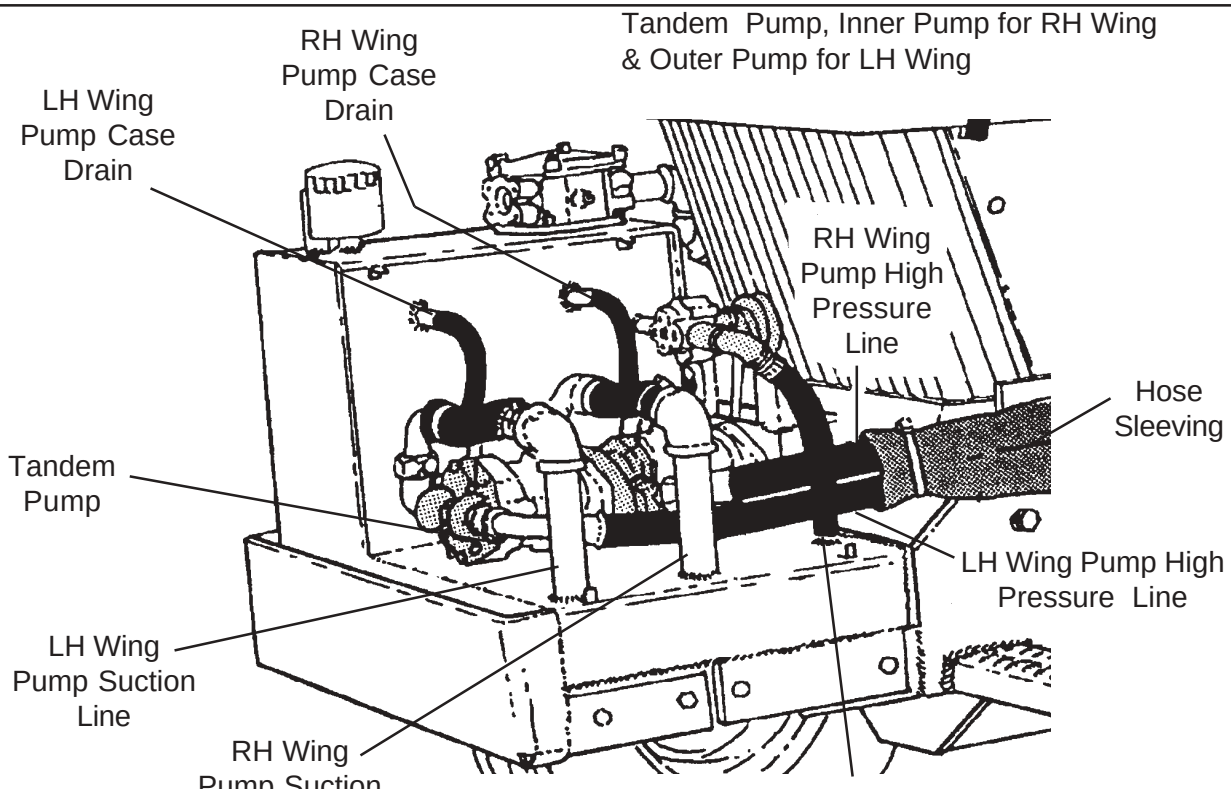
Tandem Pump, Inner Pump for RH Wing & Outer Pump for LH Wing
RH Wing Pump Case Drain
LH Wing Pump Case Drain
RH Wing Pump High Pressure Line
Hose Sleeving
Tandem Pump
LH Wing Pump High Pressure Line
LH Wing Pump Suction Line
RH Wing Pump Suction Line
Cyl System Supply Pump Suction Hose

Figure 24

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Pump & Motor Hydraulic Schematic

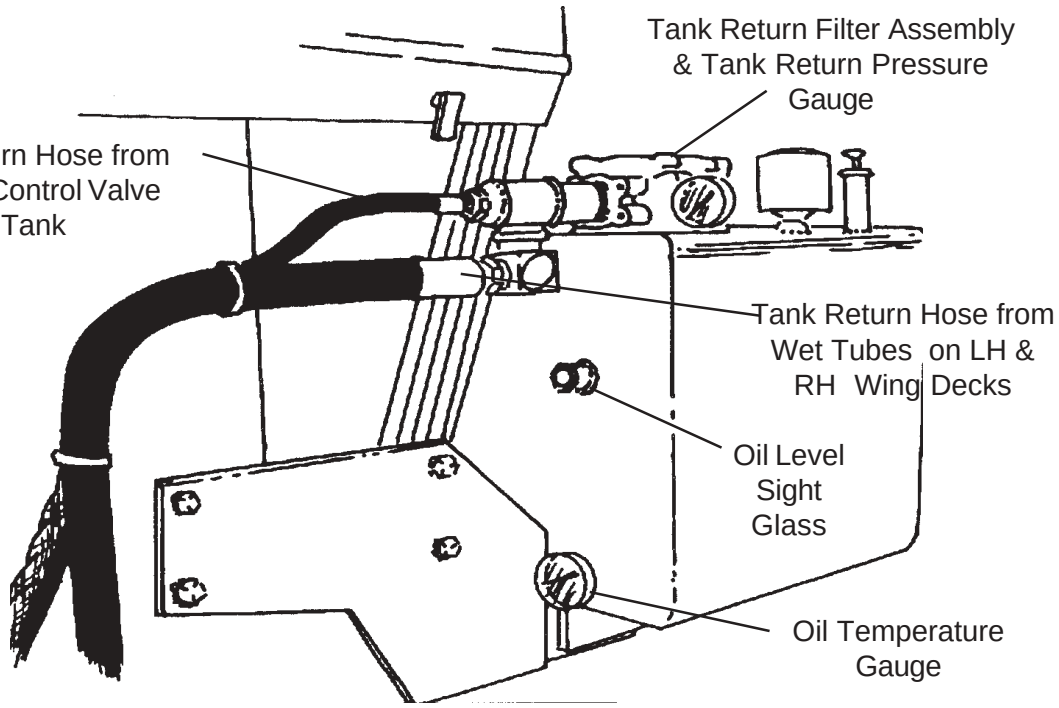
Tank Return Filter Assembly & Tank Return Pressure Gauge
Tank Return Hose from Cylinder Control Valve to Tank
Tank Return Hose from Wet Tubes on LH & RH Wing Decks
Oil Level Sight Glass
Oil Temperature Gauge

Figure 25

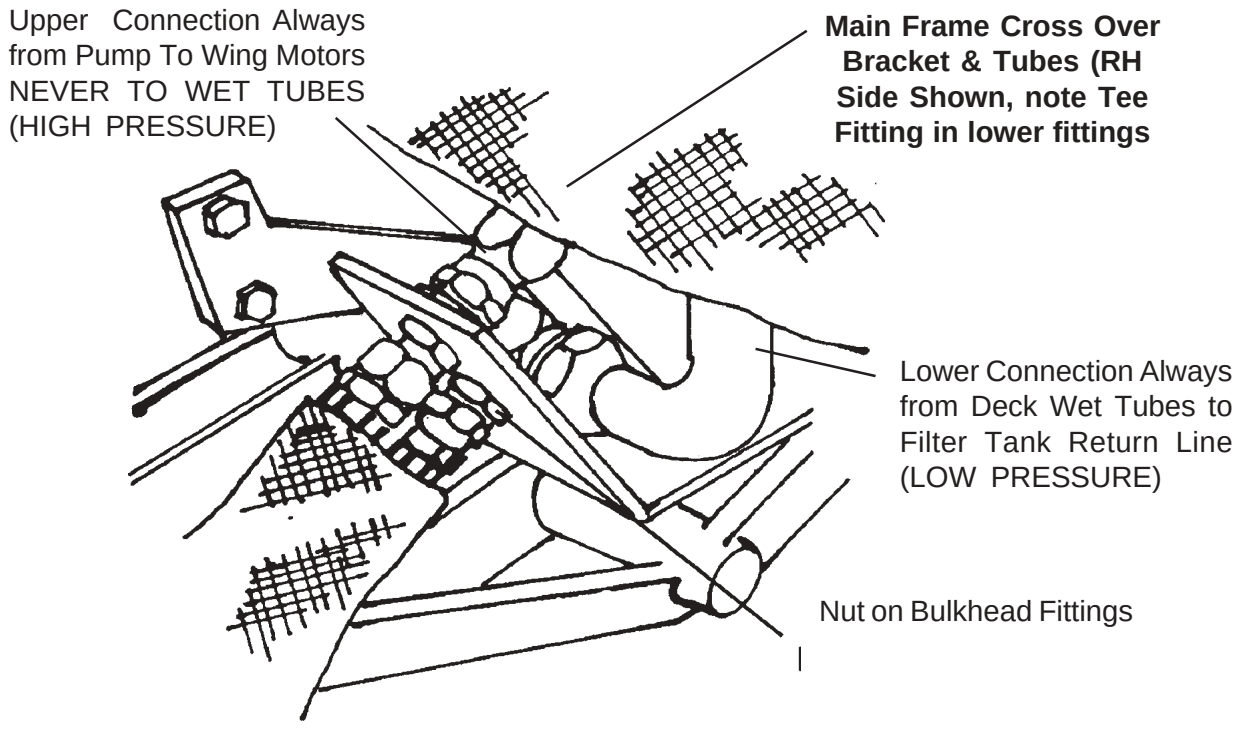
Upper Connection Always from Pump To Wing Motors NEVER TO WET TUBES (HIGH PRESSURE)
Main Frame Cross Over Bracket & Tubes (RH Side Shown, note Tee Fitting in lower fittings
Lower Connection Always from Deck Wet Tubes to Filter Tank Return Line (LOW PRESSURE)
Nut on Bulkhead Fittings

Figure 26

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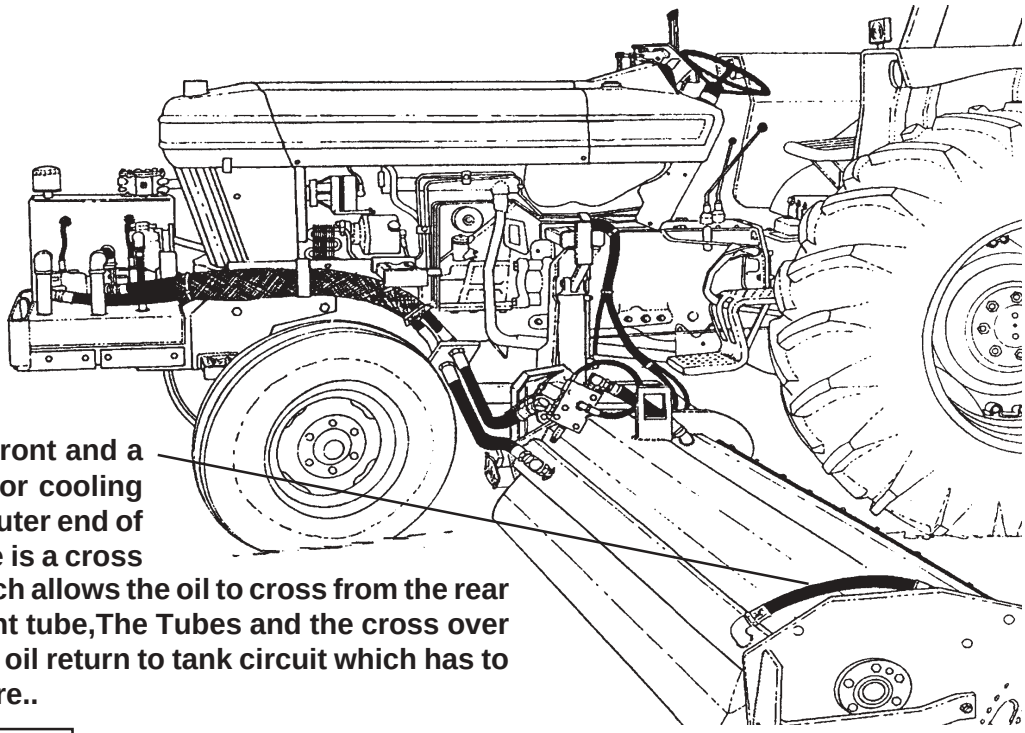
Pump & Motor Hydraulic Schematic



Wings have a front and a rear wet tube for cooling the oil. At the outer end of the decks there is a cross over hose which allows the oil to cross from the rear tube to the front tube,The Tubes and the cross over hose are in the oil return to tank circuit which has to be low pressure..

Figure 27

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NOTES

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Section 6

INTERSTATER

Joystick, Valve & Control Cable Connections

New Holland TL-100 Tractor

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Joystick , Valve & Control Cables

Prepare Control Valve:

1. Remove standard control Handles. When using the remote control cables and handles the standard handles must be removed and discarded. This is done by removing the C-Clips and pins that hold the handles to the valve body and the C-clips and pins that hold handles to the spools. (See Figure 1)

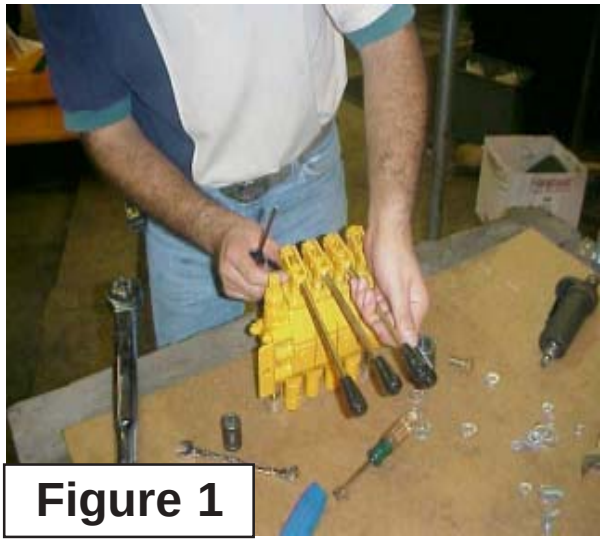

Figure 1

2. Bolt Valve Mounting Bracket to Mainframe . The valve mounting bracket is bolted to the Right Hand side of the tractor. It is bolted to the mainframe. There are two different sets of hole in valve mounting bracket, this allows the location of the valve to be varied.

3. Install The Cylinder Control Valve to Valve Bracket. The control valve is mount to the valve bracket using two bolts. These two bolts is all that will be needed to mount valve to valve bracket. (See Figure 3).

4. Install sleeving over the return hoses from heads and control valve and Control valve Pressure Hose. Slide the three hoses through the sleeving. Slide the hoses with the sleeving through the hose support ring bolted to the side of the tractor. Tie the sleeving using plastic ties around the hoses to keep it from moving (See Figure 22). Tie the sleeving with plastic ties around the pressure hose on the LH side of tractor (See Figure 2)

Figure 2

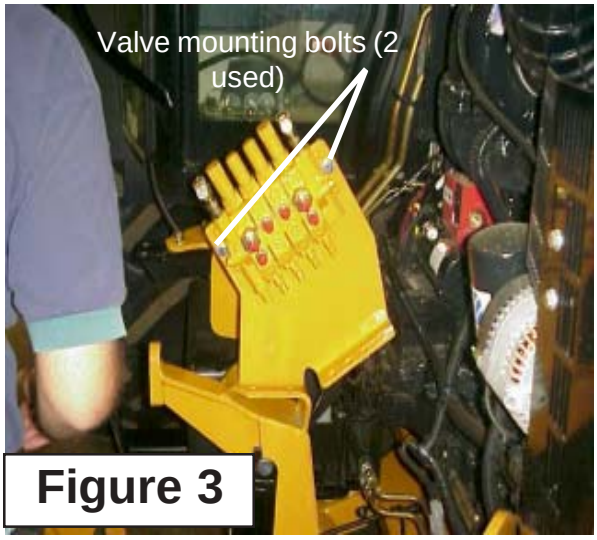

Figure 3

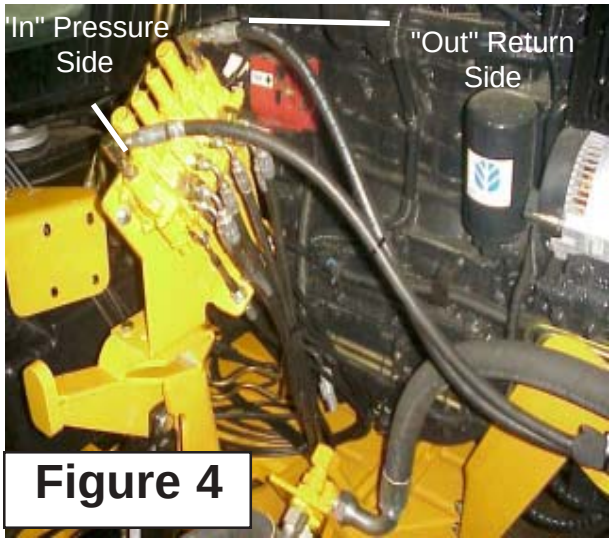

Figure 4

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5. Install sleeving over the return hoses from heads and control valve and Control valve Pressure Hose. Slide the three hoses through the sleeving. Slide the hoses with the sleeving through the hose support ring bolted to the side of the tractor. Tie the sleeving using plastic ties around the hoses to keep it from moving (See Figure 8). Tie the sleeving with plastic ties around the pressure hose on the LH side of tractor (See Figure 8)

6. Install return hose to cross member and Hoses to Control Valve. Connect the return hose to the cross member on right hand side of main frame crossmember (See Figure 5). The other end will connect to the return filter Tee fitting (See Figure 4)

7. Connect Pressure & Return Hose to Cylinder Control valve. Connect the pressure hose running from the RH side of small pump to RH Top side of control valve, The port will be marked with a "P" cast into it, the other end is connected to the small supply pump (See Figure 4 & 7). Connect the return hose that is connected to the Tee Fitting of the return filter to the Return side of the control valve with a "T" cast into it (See Figure 4 & 6)

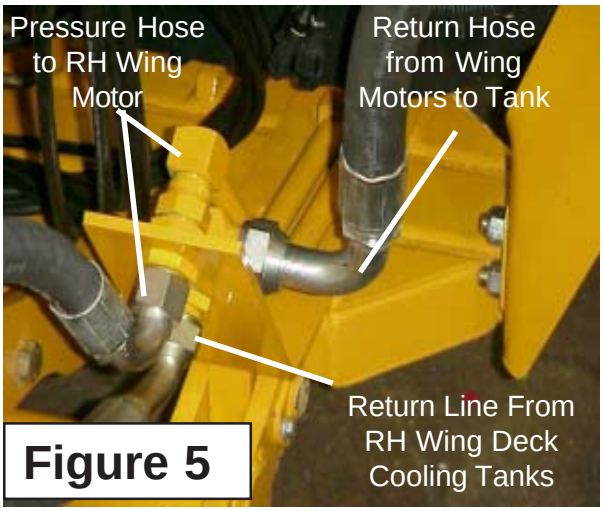

Figure 5

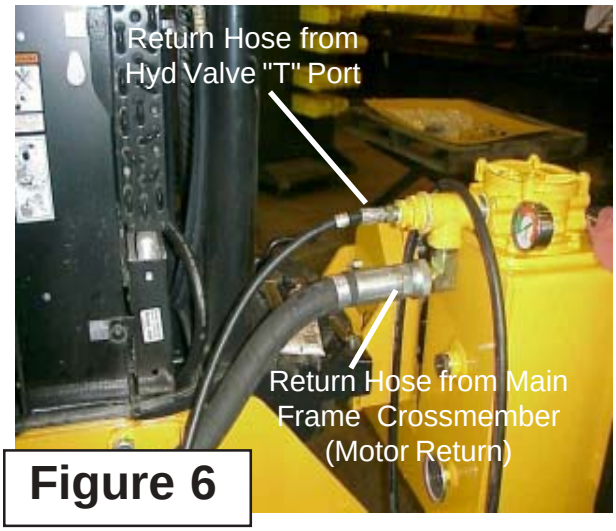

Figure 6

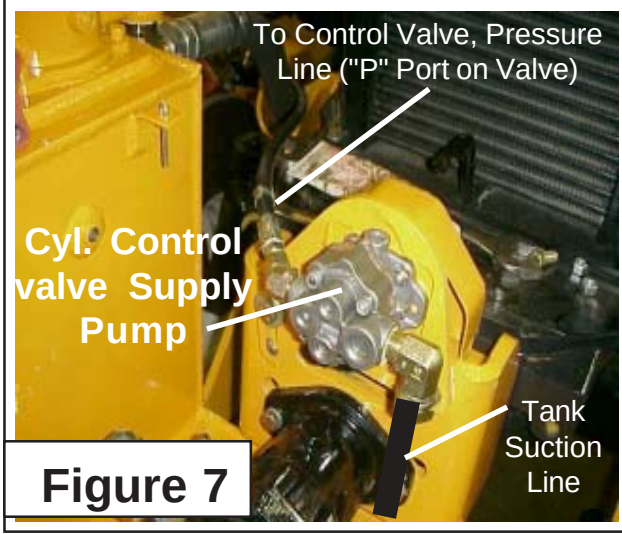

Figure 7

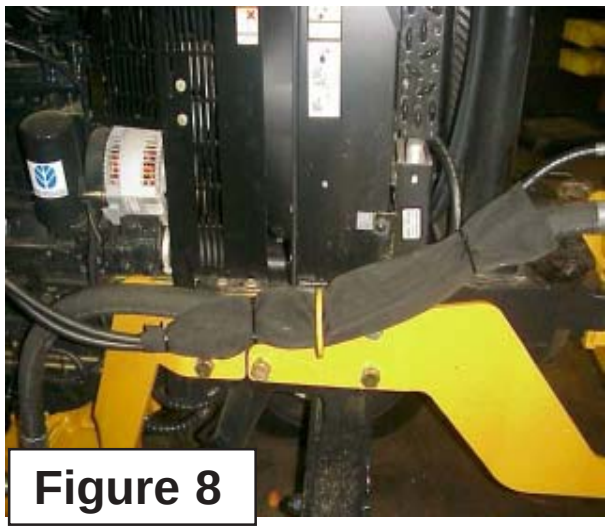
Figure 8

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Joystick , Valve & Control Cables

Remote Control Cable Connections Cab Tractor:

1. Control Valve Cable Clips. Locate the four cable mounting clips and four roll pins (shown laying on muffler bracket for illustration only in Figure 9). Start the roll pins into the clips as shown through one side only (See Figure 9). Insert the Remote Cable through the Control Valve Mount Bracket (See Figure 2). Install the large cable retaining / Adjusting nut onto threaded portion of cable housing (See Figure 2). DO NOT tighten this large nut until later. On the tip of the threaded end of the cable there is a 1/4" nut. Screw this nut down onto cable. Insert the cable clip down over threaded cable end (See Figure 11). Find the four 1/4" nut supplied, install one onto end of cable down into clip. This nut should be screwed onto cable at least the thickness of the nut, do not screw it on so far that it will interfere with the operation of the cable. Using the nut that was already on the cable screw the nut out until it is against the clip from the bottom side, tightening this nut against clip will lock the other nut inside of clip. (See Figure 11).

Figure 9

2. Connect Clip to Valve Spool. Turn the clip and the valve spool to where the hole in the clip and the hole in the clip are aligned. Using a hammer drive the roll pin through the hole in the spool and through the other side of clip (See Figure 12) . Make certain to keep the clip aligned when driving pin in. Turn the clip and spool as shown (See Figure 13), Continue this with the other 4 cables and clips (See Figure 14).

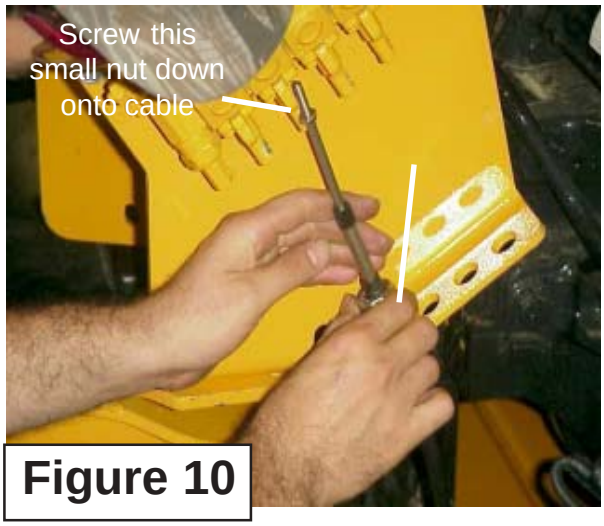

Figure 10

3. Connect Cylinder Hoses to Valve. There are six cylinder hoses that connect to Control Valve. One Pressure "P" hose and one Tank "T" hose. These hoses are connected as follows (See Figure 15 , 17)

1. Tilt Cyl. Rod End RH Wing.
2. Tilt Cyl, Butt End RH Wing.
3. Lift Cyl. Rod End, RH Wing.
4. Tilt Cyl. Rod End LH Wing.
5. Tilt Cyl. Butt End LH Wing.
6. Lift Cyl. Rod End LH Wing.
7. "P" Pressure Hose from Pump
8. "T" Return Hose To Tank

Connect hoses with elbow pointing down (See Figure 8)

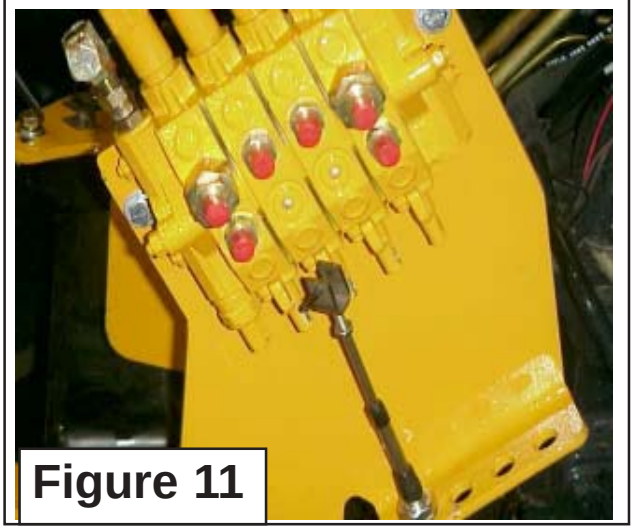
Figure 11

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Joystick , Valve & Control Cables

Remote Control Cable Connections: (continued)

Figure 12

Figure 13

Figure 14

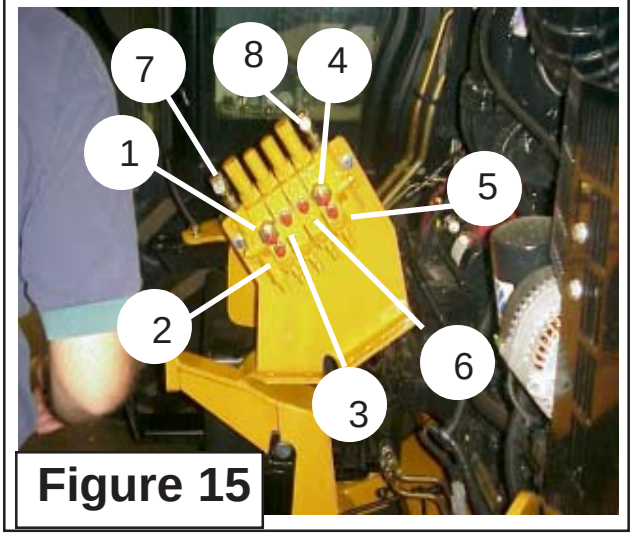

Figure 15

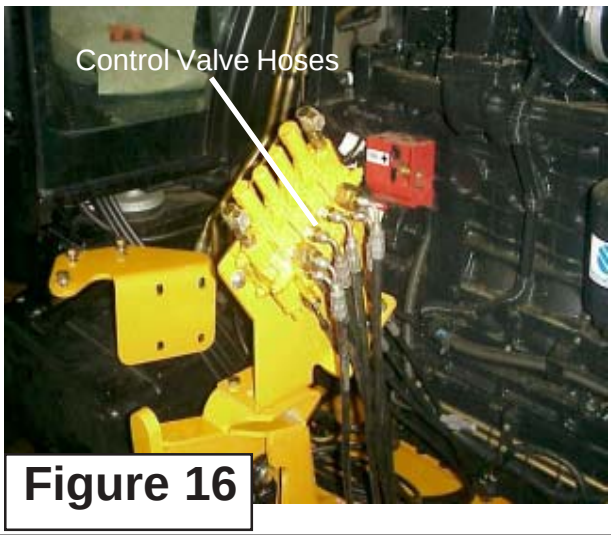

Figure 16

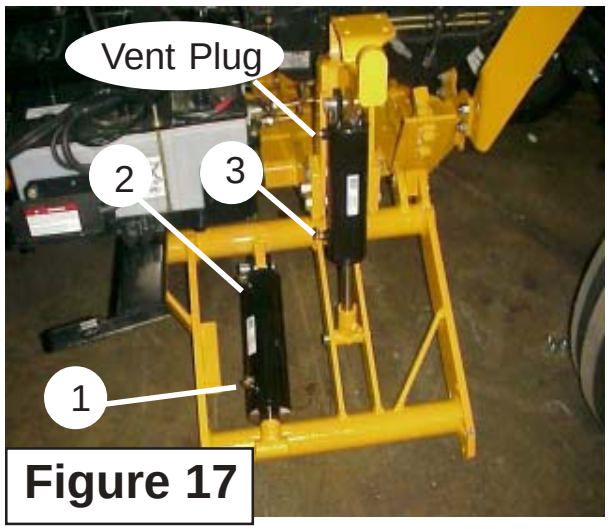

Figure 17

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Remote Control Cable Connections Cab Tractor:

1. Install Remote Cable Control Lever Mounting Bracket In Cab Tractor. The Tractor shown has a Optional Joystick control function from New Holland, NOT All tractors will have this optional control in the cab. The Mounting bracket used by Alamo Industrial is designed to use with this optional control or with out it (See Figure 18). The two bolts (See Figure 18) has rubber caps on them that will pop off bolt heads. The two bolts that hold the optional control to the inner fender well are threaded holes. There are two spacers used under these two bolts that will need to be removed (See Figure 19), the mounting bracket will have spacers welded to it to replace these two spacers. NOTE: When removing spacers they may fall down between padding and fender well, you may have to pull the padding away to reach in to find them. When Mounting the Bracket use the same two bolts that you removed from the optional tractor control valve. IF YOUR TRACTOR DOESN'T HAVE OPTIONAL CONTROLS as shown if figure 18 the same bracket (See Figure 20) will still be used. The two threaded holes will still be in the fender well but there will be no holes in the padding. You will need to raise the padding, locate the two holes and cut two holes in the padding to match the two threaded holes. Using the two supplied bolts mount the bracket to the inner fender well (See Figure 21). When Bracket has been tightened reinstall the two rubber caps on the bolt heads (See Figure 22)

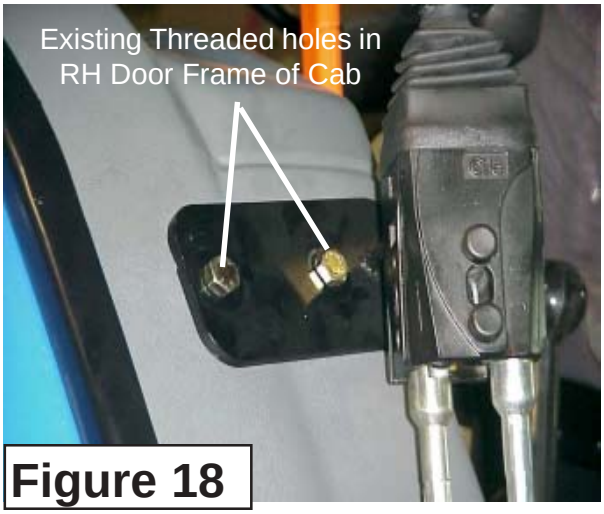

Figure 18

Figure 19

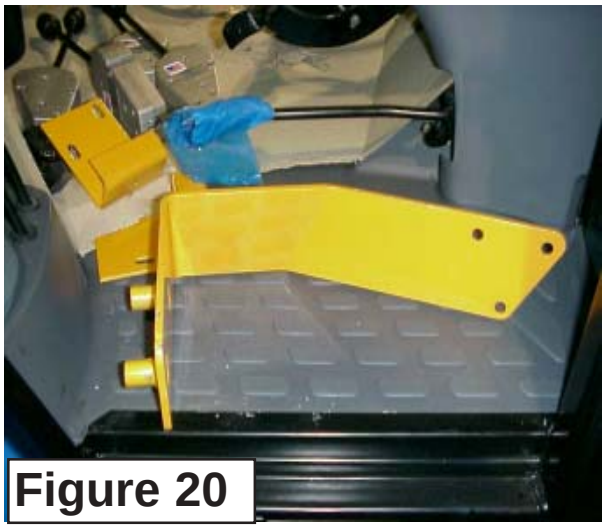
Figure 20

Figure 21

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2. Cut Hole Through Rubber Floor Mat and Cab Floor. Some Cabs may already have a hole through floor, pull up rubber mat and check before cutting hole. It is recommended that a 2" round hole be cut to keep all the cables and wire harness together and smoothly coming up through floor. Before a hole is cut in floor check the under side to make certain that the hole saw is not going to damage any of the components under the floor. Make certain that the hole cut is far enough over that it will not interfere with operators foot room. Cut hole through floor mat and floor using a round 2" hole saw (See Figure 12). After you cut the rubber mat with the hole saw pull the piece of rubber out of saw, this will make it easier to cut through the floor. (See Figure 12)

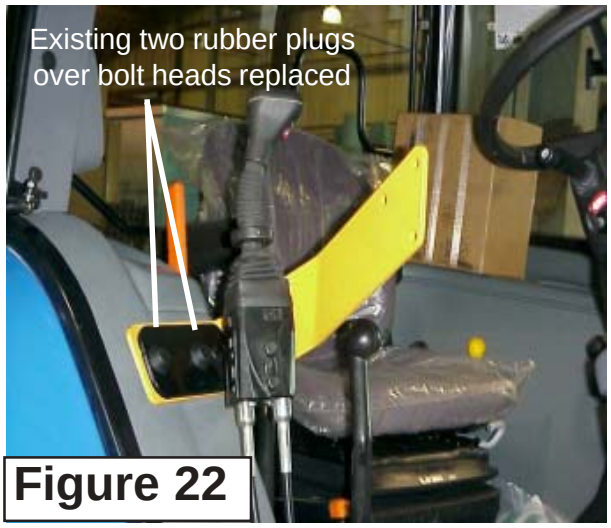

Figure 22

3. Cut Hole In Floor and Floor Mat. Using a hole saw cut a hole through the floor mat and the cab floor. You will need to lift the mat and check under it and check under the cab floor before cutting the hole, you will need to make certain you are not cutting any other components of the tractor. (See Figure 23)

4. Install Wire Harness through floor Mat. The Wire harness will come to you with the on / off switches attached, these switches will need to be removes to Push the Wire Harness up through the floor and boot cover (See Figure 23).

Figure 23

5. Insert Cables up through Boot Cover. Mark the cables as to which is which on the control valve as they need to be connected in the same order on the inside of the cab as they are connected to the control valve (See Figure 23).

6. Reinstall switches and Switch mounting bracket . Reconnect the switches and the mounting brackets back to the wire harness (See Figure 23).

7. Mark Which Cable is Which. It is important that each cable be marked as to which one it is in relation ship to the valve. Start with the cable closest to the engine and mark it 1, next out mark 2, then 3 and then 4 (See Figure 24). These marked cables will make a difference when mounting the control cable handle assemblies to the mounting bracket.

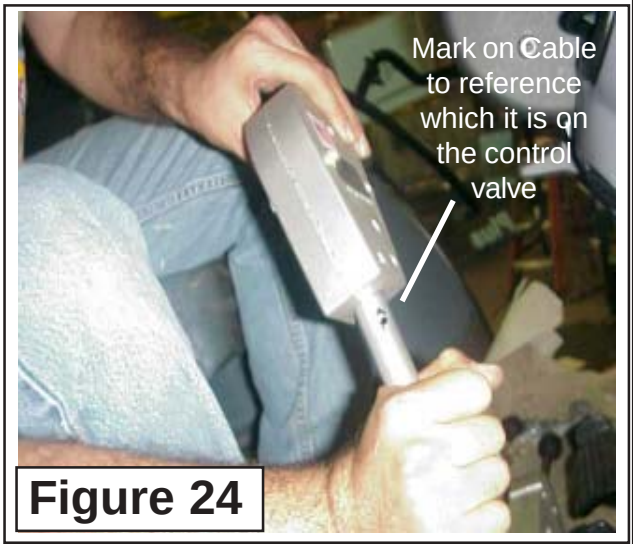

Figure 24

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Joystick , Valve & Control Cables

8. Each controller assembly comes fully assembled. All required hardware etc. is included. The control cables are not included with the control handles and should be ordered separately. The Controller must face forward as shown or controls will be backward (See Figure 25)

9. To attach the cable, manipulate the controller handle so that the attachment nut is exposed as shown. Remove the lower most nut and screw from the controller housing.
Thread the cable nut into the controller attachment nut and tighten. (See Figure 26)

10. Allow the controller handle to return to neutral. Slide the cable guide tube into the control housing and reinstall and tighten the housing screw.

11. Check the operation of the spool, cable and controller. Some adjustment at the valve end may be required too ensure that the spool returns to neutral when the controller is in the neutral position. (See Figure 27)

12. The control lever assemblies utilizes a small **spring** to make up for free play in the cable to valve connection. The control valve spool spring provides the centering capabilities of the controller and the valve spool. **Lack of centering at the controller is normally attributed to poor adjustment at the valve to cable connection or binding of the cables due to poor routing.**

13. The control lever assemblies will bolt together to form a group of handles, there will be 4 handles bolted together along with the switch mounting brackets. (See Figure 28 & 29) The switches will mount to these brackets. Dual Wings models will have two switches. The switch for the left wing mount on the left and switch for the right wing mounts on the right (See Figure 28 & 29). The same two long bolts that go through cable control handles will go through switch brackets.

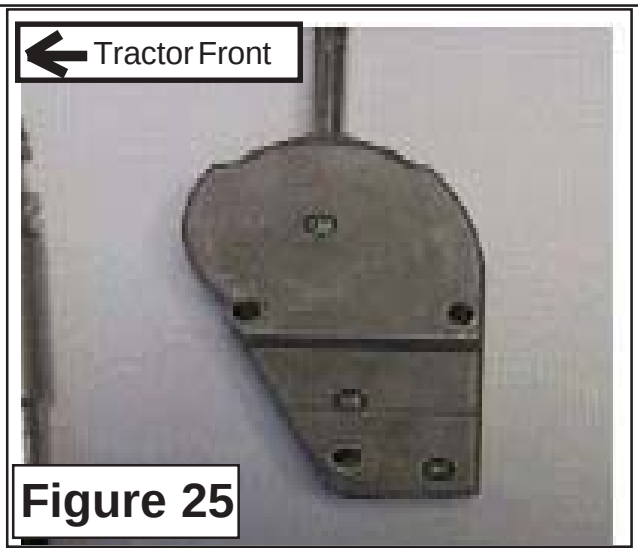

Figure 25

Figure 26

Figure 27

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14. Install Cable Control Handle Assembly to Mounting Bracket. The Control handle will mount in a stack using the three long bolts that are furnished. This is where the Control cables will need to be numbers as explained in step 7 earlier. Install handle cable assembly no. 1 (See Figure 28) and then handle cable assembly no. 2, after handle no. 2 install the push pull switch and bracket for the LH Wing (See Figure 29). Install Handle no. 3 and handle no. 4, then install the push pull switch bracket for the RH Wing (See Figure 29)

Figure 28

15. Bolt Control Handle Group to Mounting Bracket. The control handles will bolt to the mounting bracket with the same three long bolts that hold them together (See Figure 30). Tighten the three lock-nuts on the mounting bracket. The three bolts will stick out of the locknuts a short distance. These excess length of threads can be cut off with a hacksaw next to the nut. This will prevent the threads from snagging on anything (See Figure 31).

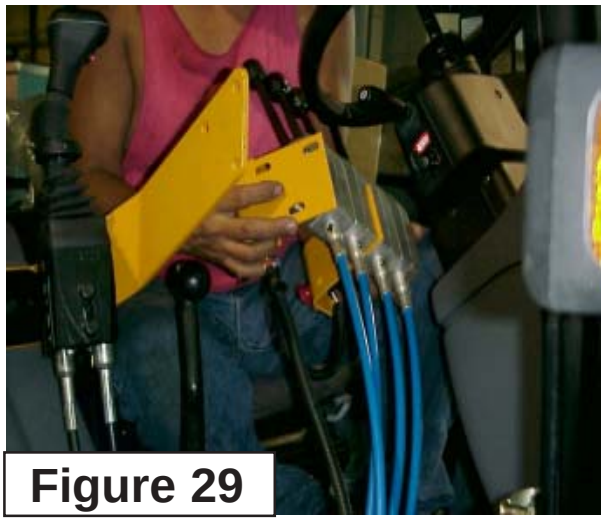

Figure 29

16. Adjust Handles. The handles will have some adjustment to the as the Mounting bracket the handles bolt to will have slotted holes to allow the handles to be rotated to position the handles straight up. (See Figures 32 & 33) Cab Model Shown.

Figure 30

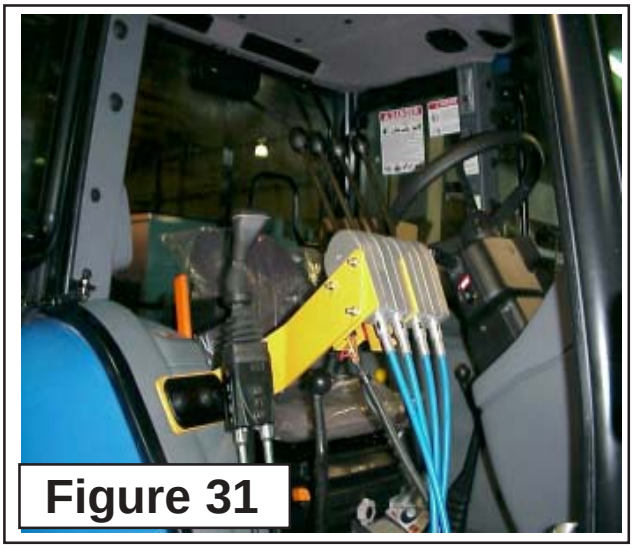

Figure 31

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Joystick , Valve & Control Cables

17. Tie Cables and Wire Harness together. Tie the cables and Wire Harness together with plastic ties inside the cab and outside the cab. This will keep them from moving around. Cab Model Shown.

18. Control Valve Hydraulic Schematic. The schematic shows the routing of hoses to the cylinder control valve. The cables must be connected in pattern as shown (See Figure 32 & 33) in order for the proper function to match instructions. Cab or Rops model are the same (See Figure 33)

19. Adjust Handles. Handles for the Cab Model or Rops Model will adjust about the same .The handles will have some adjustment to them as the retaining nut on the Valve end of the cable is tightened. Tighten these retaining nuts now. (See Figure 34).

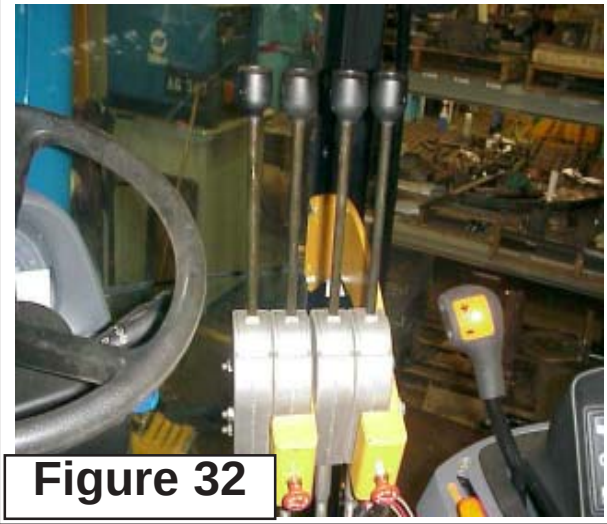

Figure 32

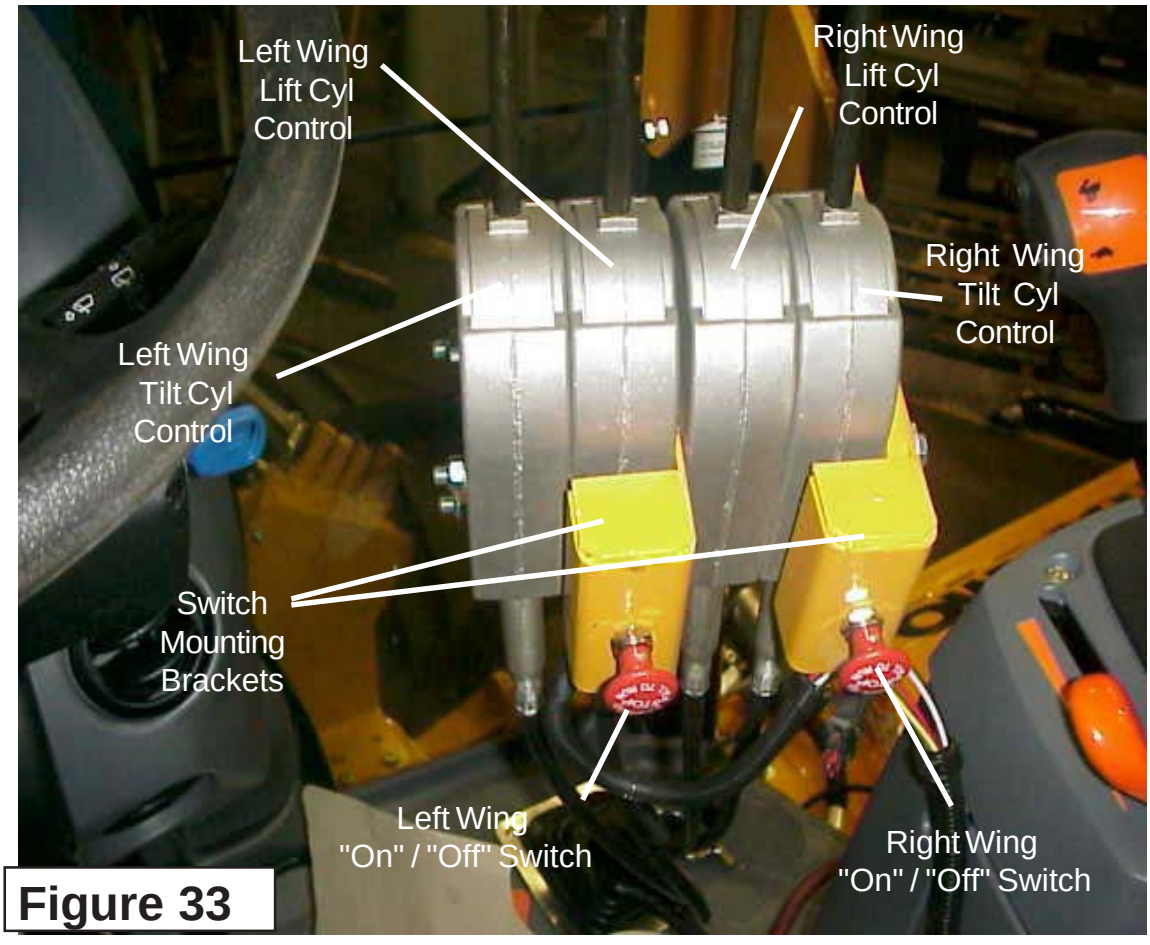
Left Wing Lift Cyl Control
Right Wing Lift Cyl Control
Right Wing Tilt Cyl Control
Left Wing Tilt Cyl Control
Switch Mounting Brackets
Left Wing "On" / "Off" Switch
Right Wing "On" / "Off" Switch

Figure 33

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20. Check Hydraulic Hose Routing. Shown below is the routing of the hydraulic Cylinder & Control Valve. Double check these before running Unit. (See Figure 35). The Hydraulic hoses must be connected correctly to the cylinders and the Valve or the control functions will not be correct according to the operation instruction decal (See Figure 35).

Figure 34

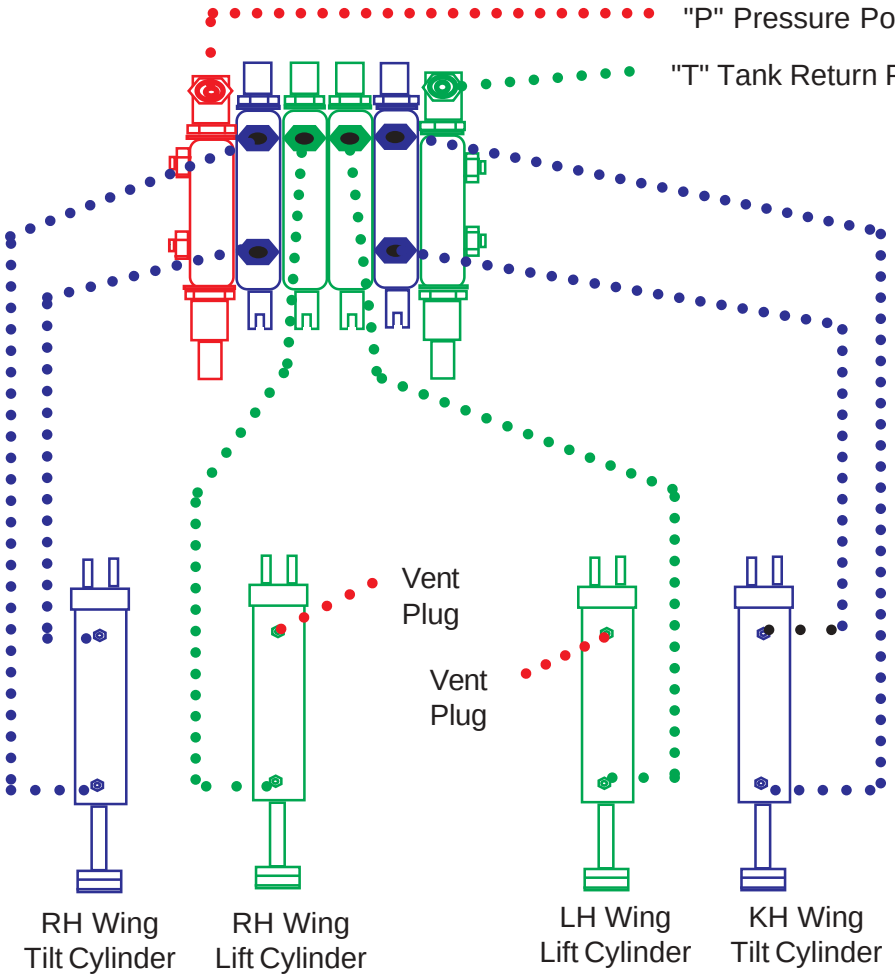

Figure 35

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Remote Control Cable Connections (ROPS Tractor)

Remote Control Cable Connections ROPS Tractor:

1. Install Valve Stand to Tractor on ROPS Tractor only. Attach Valve Stand to the top of the Right Lift Cylinder Support with (3) 1/2" x 1-1/2" bolts, and (3) 1/2" locknuts (See Figure 36).

2. Attach Valve Stand to Valve Mount Bracket. Attach Valve Stand to the Valve Mount Bracket with (2) 3/8" x 1-1/4" bolts and (2) 3/8" locknuts (See Figure 37).

3. Attach Control Valve to the Valve Stand. Attach Control Valve to the Valve Stand with (2) 3/8" x 1" bolts, (2) 3/8" locknuts. Attach the Top Cover and the Bottom Cover to the Valve Mount Bracket with (8) 3/8" x 1" bolts, (8) 3/8 washers and (8) 3/8" locknuts (See Figure 38).

4. Install Mower Wing ON / Off Switches. Make certain to install connector so that larger brown wires are located on bottom poles of switch. This applies to Dual Wing and Single Wing applications

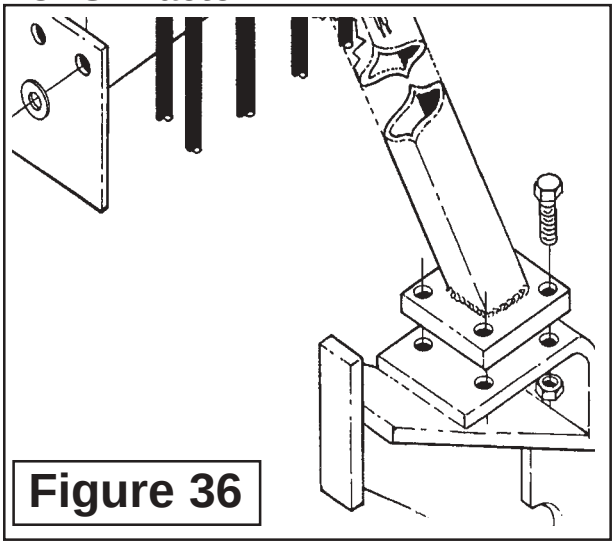

Figure 36

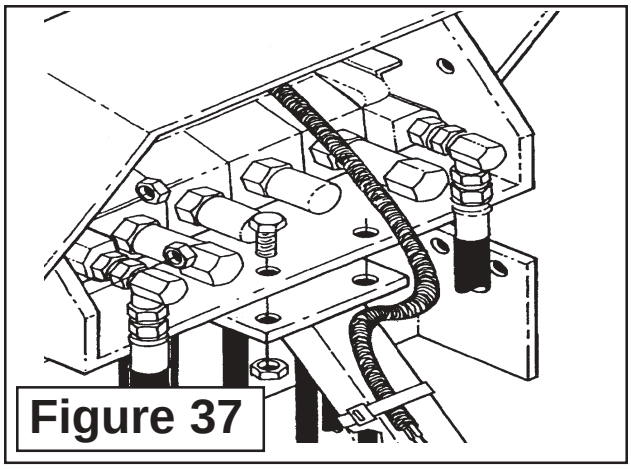

Figure 37

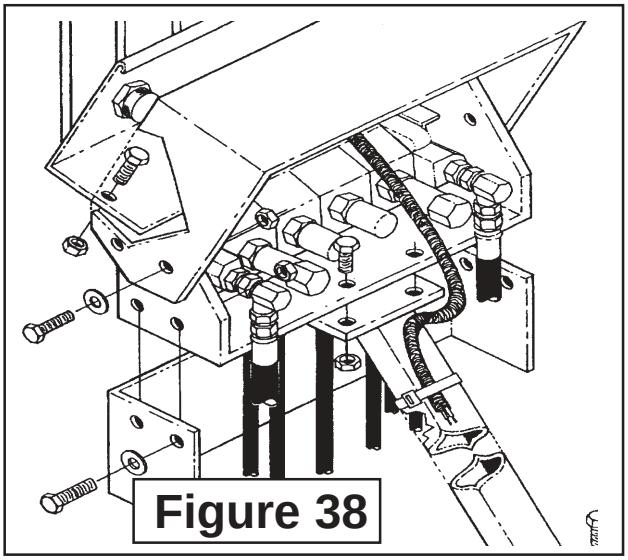

Figure 38

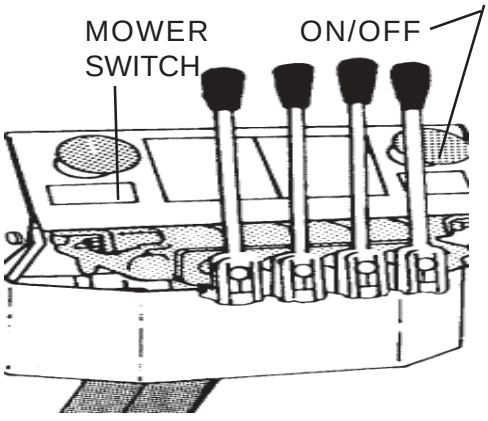

Figure 39

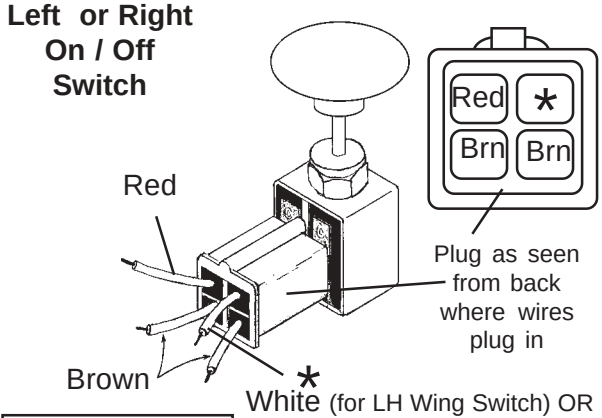

Figure 40

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Wire Harness Connections

Wire Harness Connections:

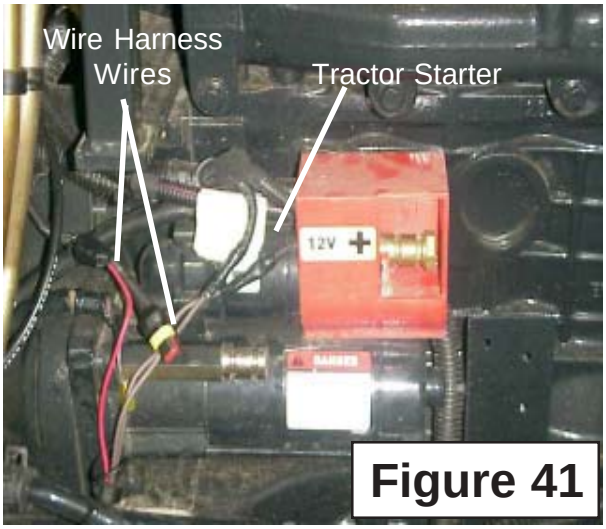

Figure 41

1. Connect Wire Harness to Tractor Starter. The wires to the starter from the off on switches will need to be connected to the tractor near the started connections (See Figure 41, 42 & 43). All see the wire / harness schematic on the following pages. Consult the Tractor Repair Manual for wiring schematic of Tractor.

2. Check all Wire Harness Routing. Inspect all of the wire harness, make certain the all portions of wire harness that have been installed is tied up and out of the way of folding components or any thing that may damage them (See Figure 42 & 43).

Figure 42

3. Wires from the safety switch must be routed close to cutterhousing side sheet and lift frame pivot points. This will prevent wires from being stretched and broken when cutterhousing is raised or lowered to maximum positions.

NOTE: Route wires in such a manner to prevent interference with the operation of tractor or INTERSTATER. Ensure that wires DO NOT lay against anything which could wear through insulation and cause a short circuit.

After connecting all wires, wrap wires with flexguard tubing. Neatly gather hydraulic hoses and flexguard tubing and strap together using plastic ties.

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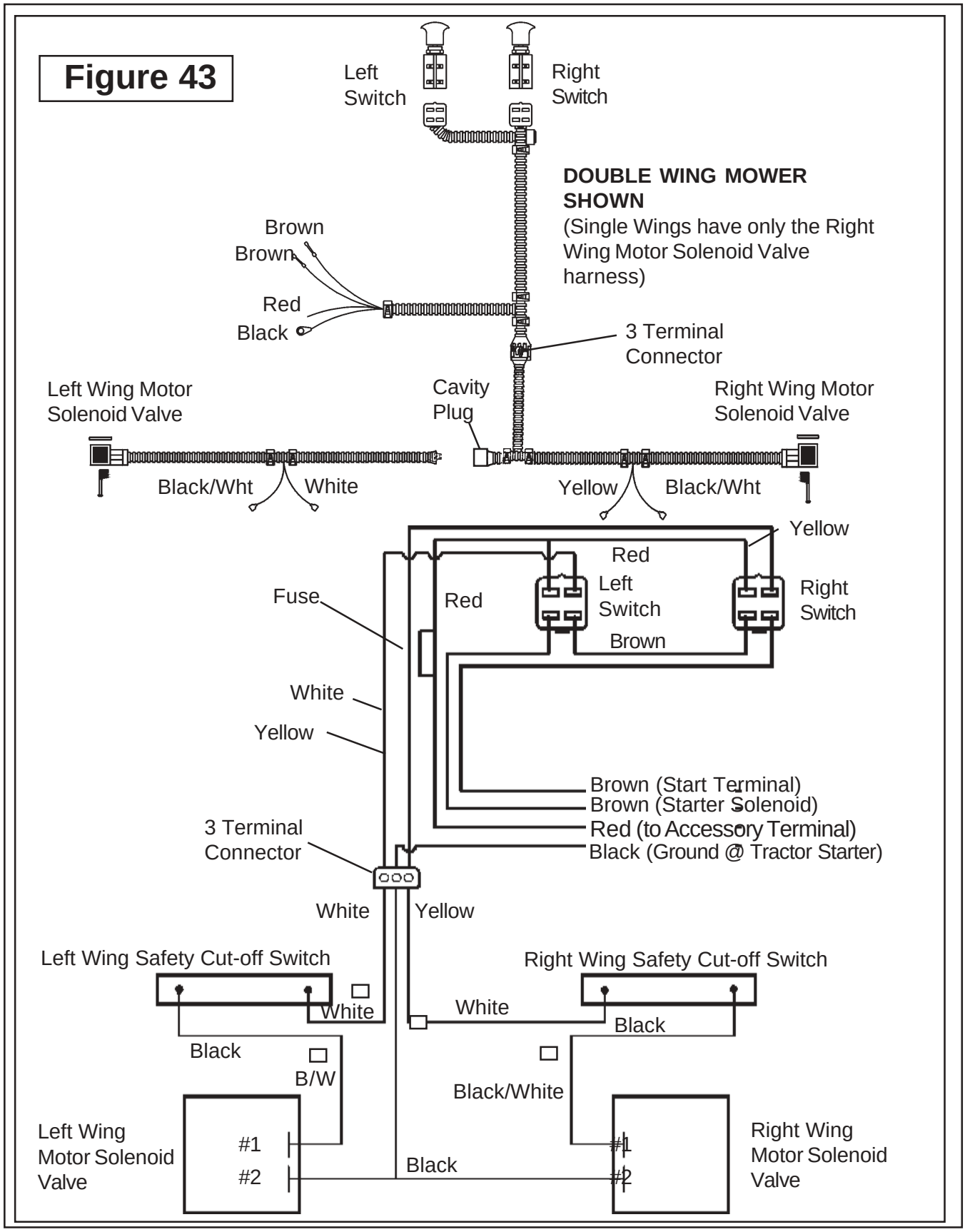
Wiring Harness Schematic



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Section 7

INTERSTATER

Rear Mower Installation

New Holland
TL-100 Tractor

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Rear Three Point Mower Connection:

1. Install Rear Lift Chains. The rear lift chains will replace the three point lift links using the same pins you removed from the lift links. These chains allow the mower to float with the contour of the ground.

Figure 1

Figure 2

Figure 3

Figure 4

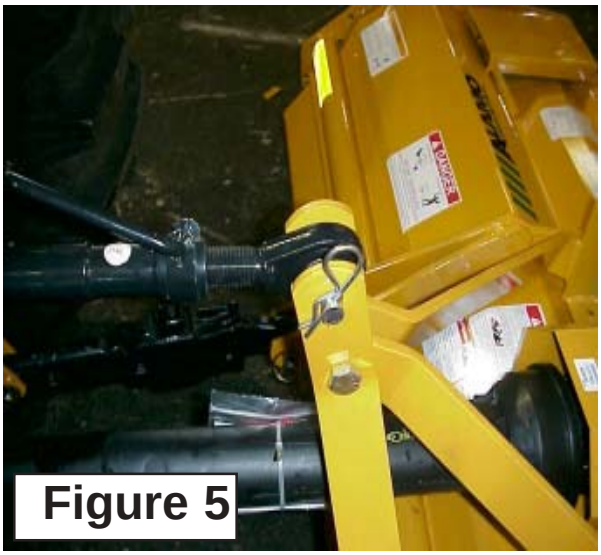

Figure 5

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2. The Rear Mower is a standard Three Point Hitch mounted mower that is PTO driven through a driveline. It will be sent already assembled with the driveline tied to it. (See Figure 1)

3. Connect Lower Hitch Pins. The lower hitch pins connect to the lift arms of the tractor with click pins, these pins are furnished with the mower. (See Figure 5 & 7). It is best to connect the lower arms of the three point first. You can use the lower arms to

4. Connect Upper Hitch Pin. The upper hitch pin will connect to the top three point adjustable Link with a pin and click pin. The Top Link is furnished with the tractor not with the mower. The Top Link is adjustable in length and is used to level the mower. (See Figure 8)

5. Connect Driveline. The Driveline arrive tied to the mower (See Figure 6 & 9). Cut the ties loose from mower. Connect the clutch end of the driveline to the mower, the clutch is retained to the gearbox input shaft by a clamp yoke on clutch hub. Slip the clutch onto the input shaft until holes in clamp yoke are aligned with the grooves in the input shaft. Install and tighten the two bolts and nuts. The QD Yoke end connect to the Tractor PTO.

Figure 6

Figure 7

Figure 8

Figure 9

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6. Leveling the Rear Mower & Adjust gutting Cutting Height. The Rear Mower is leveled with the top Three Point Link. The Cutting Height is adjusted by moving the Roller up or down by change the bearing bracket mounting hole. The is a decal on the deck next the Operators/ parts manual cannister (See Figure 10 & 11)

7. Rear Mower Completely Connected. With the rear mower completely connected. Check all Oil levels and grease mower components (See Figure 14) before running mower. Also DO NOT start tractor if the rest of the assembly to the interstater is not done. Make certain that all hoses, components, wiring is completed and Oil Tank for interstater has been filled with oil.

8. Slip clutch is incorporated in the PTO driveline. It is designed to slip, absorb the shock load, and protect the driveline. It is important that the clutch lining plates slip when an obstacle or load heavier than clutch setting is encountered. Therefore, if the machine sits outside longer than 30 days and is exposed to rain and/or humid air it is important to make sure that the clutch lining plates are not rusted/corroded together. Before using the mower use the following procedure to make sure the clutch will slip and give the overload protection required. (See Figure 13) This is a required step because the driveline has been sitting and may be stuck.

A. Loosen nuts on springs until the springs can freely rotate, yet remain secure on bolts.
B. Attach mower to tractor and start the tractor. Set the engine speed at 1200 RPM.
C. Mark outer plates with marker, paint or any form that will work for you to tell if the compo nents of the clutch slipped.
D. Engage the PTO (approximately one second) and then quickly disengage it. The friction lining plates should break loose (check the mark).
E. Turn tractor off and tighten the nuts on the springs to their original position of 1-5/16" compressed spring length.

Figure 10

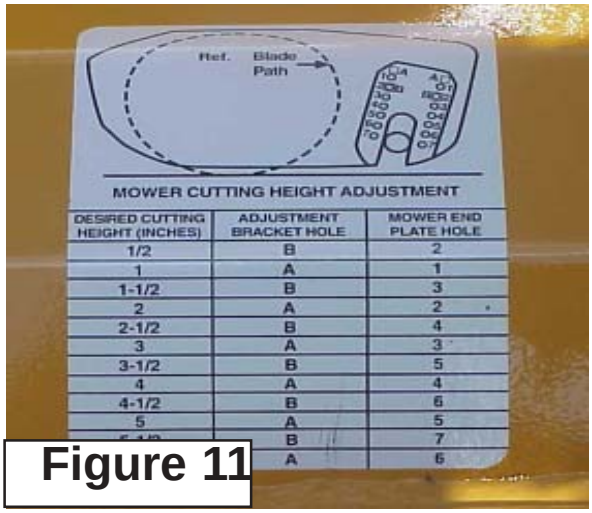

Figure 11

Figure 12

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9. Slip clutch is incorporated in the PTO driveline. It is designed to slip, absorb the shock load, and protect the driveline. After the first hour of operation, the slip clutch should be checked for overheating. After this first check, the slip clutch should be checked weekly or anytime there is overheating. To adjust the slip clutch, tighten the spring bolts 1/8 (maximum) turn at a time. Bolts should NEVER be adjusted to the point where the springs are compressed solid. The slip clutch should be checked periodically and adjusted to compensate for wear. The lining plates are 1/8" thick when new. Replace after 1/32" wear. If the mower has been idle for an extended period of time, or in wet weather, before operating check to be sure the friction lining plates are not frozen or rusted together. Should this freezing occur refer to the procedure described in the "Seasonal Clutch Maintenance" section on the next page. There are four friction lining plates in the slip clutch. These should be checked weekly for oil or grease, wear, and moisture which could cause corrosion on the drive plates. (See Step 8) **NOTE: Above information is listed as a reference and is listed in the operators manual as well.**

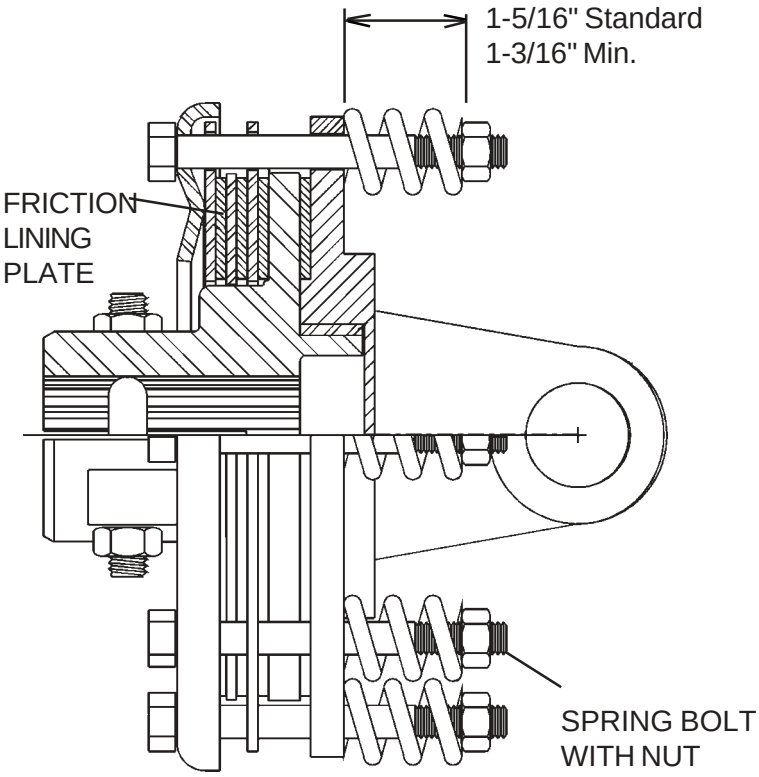

Figure 13

10. **Check All Shields. Make certain any shields that were removed during assembly the they are reinstalled. DO NOT operate mower or tractor with any shields or guards missing.**

Figure 14

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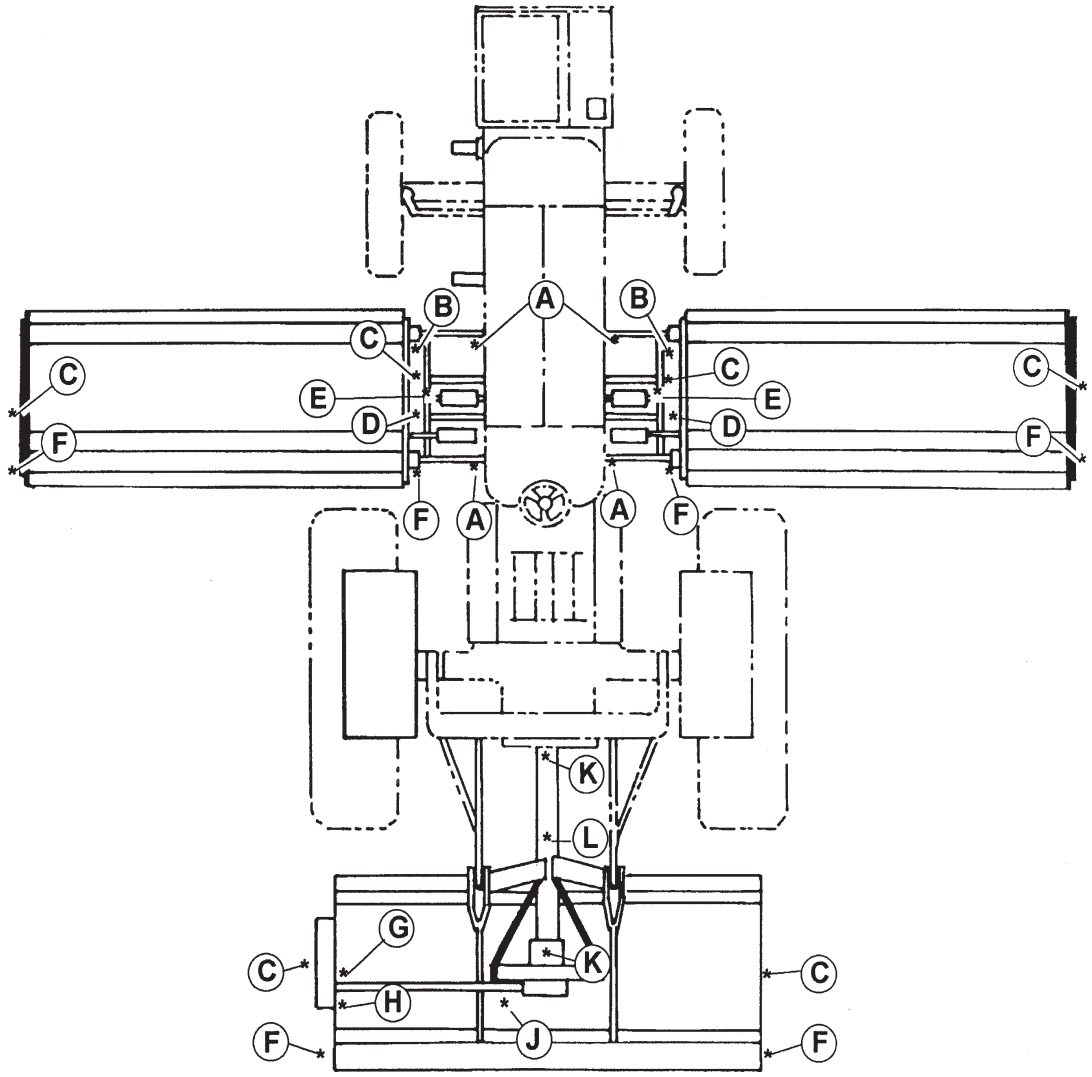
Lubrication Points



LUBRICATE ALL POINTS BEFORE OPERATING MOWER FIRST TIME

A	Lift Frame Pivot Pin	G	Rear Mower Idler Arm
B	Wing Mower Belt Idler Arm	H	Banjo Bearings
C	Cuttershaft Bearings	J	Banjo Coupling
D	TIlt Cylinder Rod Ends	K	Driveline Yoke
E	Lift Cylinder Rod Ends	L	Driveline slip
F	Roller Bearings		

Figure 15

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Initial Start-Up Procedure

INITIAL START-UP PROCEDURE:

1. Check all nuts and hex head bolts to ensure all are tight and all lock washers are fully compressed (flattened).
2. Check all hoses and hydraulic connections. Make certain they are secure.
3. Inspect all moving parts and make certain that no wires or hoses will be caught or pinched when the tractor or the INTERSTATER is in operation. Tie down loose wires and hoses.
4. Thoroughly grease the INTERSTATER and install a lubricap on each grease fitting. Refer to the Operation and Maintenance Section.
5. Jack front of tractor up enough to allow axle to pivot through its full range. While turning wheels through their limits, right and left, swing them up and down. Look for interference between tires and any part of the INTERSTATER. If interference occurs, shims (not furnished) must be welded to axle pivot stop or steering arm to limit the movement enough to avoid interference. Tractors with an adjustable front axle may require an outward adjustment of the wheels.
6. To fill the INTERSTATER reservoir with new, clean hydraulic oil, follow the steps below. Refer to the Operation and Maintenance Section for specifications. (See Figure 16)
   - A. With a hydraulic jack raise the right side of the tractor. This will tilt the tank and allow only a minimum amount of air when filling.
   - B. Avoid hydraulic contamination by filtering the hydraulic oil while filling the hydraulic tank.
   - C. Filter buggies or carts are commercially available for hydraulic system cleanup. These consist of a high-efficiency, high-capacity filter, a circulating pump, a drive motor, and hoses for connecting the overhauled machine's hydraulic system.
   - D. After the first 10 hours of operation, replace the hydraulic filter with a new one. An extra Filter Element is provided for you. Refer to the Operation and Maintenance Section for instruction.

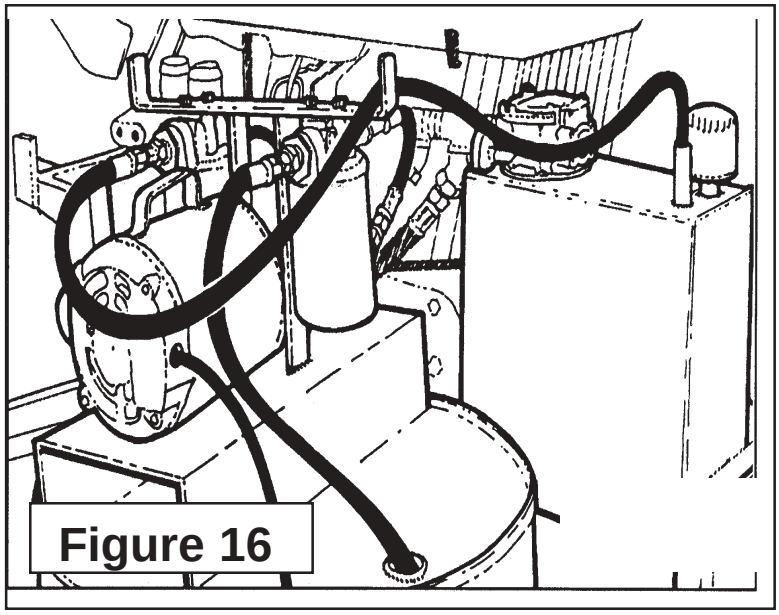

Figure 16

7. After the Interstater mower is completely assembled to the tractor and with the wings on the ground, fill the mower hydraulic tank above the oil level sight gauge approximately 5" or 1" below the top of the tank.

8. With mower ON/OFF switches in "ON" position and tractor fuel cut off, crank engine for about 30 to 45 seconds to allow oil to fill pumps and motors. Check the oil level in the sight gauge. If no oil is seen add oil to bring the level up to the sight gauge. NOTE: Do not fill the tank with oil above the level of the sight gauge. Over filling the tank with oil after the initial filling may result in oil being discharged through the air filter on top of the hydraulic tank. Start the tractor and run it for 2 minutes and then turn it off. Again check the oil level in the sight gauge. If the oil level is in the sight gauge, the unit is ready to run. If no oil is seen, add oil to bring the level up to the sight gauge.

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Initial Start-Up Procedure

CAUTION ROTATING KNIVES! Remove all foreign objects and stand clear of cutter units. DO NOT GET NEAR!

NOTE: On tractor hydraulic powered circuit only, make certain that there is full flow from tractor hydraulic system to control valve. Refer to tractor manual.

9. After hydraulic system is fully charged and functioning properly, switch cutter units on, then speed engine up to 540 RPM PTO speed. Maintain this speed for about 5 minutes. Check complete INTERSTATER, look for any leaks, loose connections, or anything that could cause premature wear or failure.

FINAL CHECK

Run INTERSTATER for about 1/2 hour at full speed. Check for leaks and vibrations. Frequently check oil temperature. Make certain it does not exceed 180 deg.

NOTE: When raising wings, make certain there is no interference with mower, frame, cylinders or tractor. Lift wings slowly.

CAUTION: DO NOT leave unit unattended, and COMPLY WITH ALL WARNING DECALS.

If unit starts to make unusual noise, stop unit and check oil level. Also check for frothy oil which would indicate a leak on suction side of system.

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Section 8

INTERSTATER

New Holland

TL-80, TL-90 & TL-100
TL80A, TL-90A & TL-100A
Tractor

Mounting Specifications

IMPORTANT NOTICE:

Listed here are components that are needed to mount the above listed tractors. There are different mount kits for different tractor sizes and configurations. When using always make certain the kit you are viewing match the tractor/mower configuration. Also make certain what the part number consist of, some part numbers is a complete assembly.

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Model Specifications Cab Model

New Holland TL80/90/100 Cab/2wd

As Of Date 06/02/04

10.00-16SL (F-2) Max Front Tire
16.9-34 (R-1) Max Rear Tire

Mount Kit:

Mainframe: Dual Wing (5" Offset Left & Right) ……..... 02980423
Component Crate: Dual Wing w/Aux Pump ……..... 02981017
Replacement Fuel Tank (27 gal/Req'd for Dual) ……..... 02980424

Options:

Lift Chain Kit (See Spec Below) ……..... 02980514
Extra Interstater Installation Manual 02981341
Aluminum Canopy 02982596
Canopy Mirror Kit 02982793
Cab Mirror Kit 02982788

Specifications:

1. TL70 models may not be applicable due to having a different engine displacement (220 cu in vs. 238 cu in). This typically results in a difference in chassis length.
2. On the original TL series, a portion of the front bolster must be ground away for driveline clearance.
3. For dual wing mowers, the factory installed fuel tank must be replaced with the one listed above to permit clearance for the cylinder mount.
4. Full Interstaters must be ordered with a 96" centered rear head. Furthermore, two lift chains are recommended for such heads.
5. As with most dual wing Interstaters, the left wing must be lowered for ingress/egress to the tractor platform.
6. For dual wing models, the left and right hand steps must be removed. A replacement left hand step has been included with the fuel tank kit. The right hand steps do not get replaced since ingress/egress on the right is otherwise blocked by the control stand.
7. The pump mount in this kit is assembled with a carrier bearing to extend the life of the driveline and pulley weldment.
8. For proper front pump driveline access on the TL-A series, the battery must be raised almost 4" using the relocation bracket provided in the mount kit. In this position, the batterymust also be down-sized in order to clear the molded headlight sockets on the underside of the hood. The dealer/customer is responsible for providing the replacement battery, however we recommend using Exide battery #34R- 84N. It measures approximately 10 1/4" long x 6 1/2" wide x 7 1/4" high.

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Model Specifications ROPS Model

New Holland TL80/90/100 ROPS/2wd

As Of Date 06/02/04

10.00-16SL (F-2) Max Front Tire
16.9-34 (R-1) Max Rear Tire

Mount Kit:

Mainframe: Dual Wing (5" Offset Left & Right) 02980423
Component Crate: Dual Wing w/Aux Pump 02980333
Replacement Fuel Tank (27 gal/Req'd for Dual) 02980424

Options:

Lift Chain Kit (See Spec Below) 02980514
Extra Interstater Installation Manual 02981341
Aluminum Canopy 02982596
Canopy Mirror Kit 02982793
Cab Mirror Kit 02982788

Specifications:

1. TL70 models may not be applicable due to having a different engine displacement (220 cu in vs. 238 cu in). This typically results in a difference in chassis length.
2. On the original TL series, a portion of the front bolster must be ground away for driveline clearance.
3. For dual wing mowers, the factory installed fuel tank must be replaced with the one listed above to permit clearance for the cylinder mount.
4. Full Interstaters must be ordered with a 96" centered rear head. Furthermore, two lift chains are recommended for such heads.
5. As with most dual wing Interstaters, the left wing must be lowered for ingress/egress to the tractor platform.
6. For dual wing models, the left and right hand steps must be removed. A replacement left hand step has been included with the fuel tank kit. The right hand steps do not get replaced since ingress egress on the right is otherwise blocked by the control stand
7. The pump mount in this kit is assembled with a carrier bearing to extend the life of the driveline and pulley weldment
8. For proper front pump driveline access on the TL-A series, the battery must be raised almost 4" using the relocation bracket provided in the mount kit. In this position, the batterymust also be down-sized in order to clear the molded headlight sockets on the underside of the hood. The dealer/customer is responsible for providing the replacement battery, however we recommend using Exide battery #34R- 84N. It measures approximately 10 1/4" long x 6 1/2" wide x 7 1/4" high.

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Model Specifications ROPS Model

New Holland TL80A/90A/100A ROPS/2wd

As Of Date 11/10/03

10.00-16SL (F-2) Max Front Tire
16.9-34 (R-1) Max Rear Tire

Mount Kit:

Mainframe: Dual Wing (5" Offset Left & Right) 02980423
Component Crate: Dual Wing w/Aux Pump 02983273
Replacement Fuel Tank (27 gal/Req'd for Dual) 02980424

Options:

Lift Chain Kit (See Spec Below) 02980514
Extra Interstater Installation Manual 02981341
Aluminum Canopy 02982596
Exide #34R-84N Replacement Battery* 02982767
Canopy Mirror Kit 02982793
Cab Mirror Kit 02982788
* Optional for the TL-A series only

Specifications:

1. TL70 models may not be applicable due to having a different engine displacement (220 cu in vs. 238 cu in). This typically results in a difference in chassis length.
2. On the original TL series, a portion of the front bolster must be ground away for driveline clearance
3. For dual wing mowers, the factory installed fuel tank must be replaced with the one listed above to permit clearance for the cylinder mount.
4. Full Interstaters must be ordered with a 96" centered rear head. Furthermore, two lift chains are recommended for such heads.
5. As with most dual wing Interstaters, the left wing must be lowered for ingress/egress to the tractor platform.
6. For dual wing models, the left and right hand steps must be removed. A replacement left hand step has been included with the fuel tank kit. The right hand steps do not get replaced since ingress/ egress on the right is otherwise blocked by the control stand.
7. The pump mount in this kit is assembled with a carrier bearing to extend the life of the driveline and pulley weldment
8. For proper front pump driveline access on the TL-A series, the battery must be raised almost 4" using the relocation bracket provided in the mount kit. In this position, the batterymust also be down-sized in order to clear the molded headlight sockets on the underside of the hood. The dealer/customer is responsible for providing the replacement battery, however we recommend using Exide battery #34R-84N. It measures approximately 10 1/4" long x 6 1/2" wide x 7 1/4" high.

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Model Specifications ROPS Model

Cab Model Shown Above with Dual Wings.

ROPS Model Shown Above with Dual Wings.

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Mount Kit - Bill of Material - (ROPS)

IMPORTANT NOTICE: The following Part / Assembly Numbers are for reference and should not be ordered as replacement parts, unless all the components in that assembly are wanted. These will break down to bills of material of the components. Some of numbers listed are NOT individual Parts but complete assemblies and/or box of assemblies. Check before ordering.

TRACTOR: ROPS, 2 WD, Use Aux Pump for Cylinders

Mainframe Weldment P/N 02980423 (Dual Wing): (5" Offset Left & Right)

Component Crate P/N 02983273 (Dual Wing): Includes Items Below

(For NH TL80/80A,TL90//90A,TL100/100A -CAB/ROPS,2wd w/Aux Pump)

Item	Part No.	Qty	Description
1	002364	2	HOSE, # 16 -16FJX -16FJX45 - 65.5" LG
2	002365	2	HOSE, # 16 -16FJX -16FJX90 - 62.5" LG
3	001770	2	HOSE, # 4 - 4FJX - 4FJX - 58" LG
4	001771	1	HOSE, # 4 - 4FJX - 4FJX - 48" LG
5	001772	1	HOSE, # 4 - 4FJX - 4FJX - 79" LG
6	001773	1	HOSE, # 4 - 4FJX - 4FJX - 89" LG
7	001774	1	HOSE, # 4 - 4FJX - 4FJX - 86" LG
8	002498	1	WIRE HARNESS, INT, DUAL POWER
9	106596	1	VALVE MOUNTING BRKT, WLD'MT
10	106597	1	COVER, TOP
11	106598	1	COVER, BOTTOM
12	703690	1	TANDEM PUMP ASY (J.DEERE)
13	02980151	1	CYLINDER SUPPORT, WLD'MT - LH
14	02980152	1	CYLINDER SUPPORT, WLD'MT - RH
15	108435	1	LIFT FRAME, WLD'MT - LH -TS-SERIES
16	108436	1	LIFT FRAME, WLD'MT - RH -TS-SERIES
17	702744	1	4-SPOOL VALVE, COMPLETE
18	02983274	1	SMALL PARTS CARTON - NH TL-A DUAL
19	02982761	1	BATTERY RELOCATION KIT
20	001930	1	HOSE, # 6 - 8MP - 4MP - 79" LG
21	001929	1	HOSE, # 6 - 6MP - 4MP - 98" LG
22	02980014	1	HOSE, # 16 - 16FJX - 16FJX90 - 68" LG
23	02968159	1	HOSE, # 16 - 16FJX - 16FJX90 - 52" LG
24	002349	1	HOSE, # 20 - 20FJX - 20FJX90 - 52" LG
25	02983358	1	VAVLE STAND, WLD'MT - RH
26	02983306	1	TANK RAIL - L.H.
27	02983307	1	TANK RAIL - R.H.
28	02983315	1	PUMP BOX ASY, W/ 1" BEARING
29	02983322	1	DRIVELINE, 1-15 X 1-15 X 31.125
30	02983311	1	SIDE MOUNT PLATE - LH
31	02983312	1	SIDE MOUNT PLATE - RH

Above items are included in Component Crate P/N 02983273

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Mount Kit - Bill of Material - (ROPS)

Carton Small Parts P/N 02983274 (NH TL-A Dual Wing): Includes Items Below

(For NH TL80/80A,TL90'90A,TL100/100A-CAB/ROPS, 2wd w/Aug Pump)

Item	Part No.	Qty	Description
1	001412	1	DECAL, CONTROL VALVE
2	001767	1	DRIVE BELT
3	001796	2	HOSE BIB FITTING, #12HOSE-#12MP
5	00751505	2	HOSE CLAMP, FOR #12 HOSE
6	00758194	1	DECAL, WARNING BELT SHIELD
7	00763977	1	DECAL, NOTICE TO OWNER
8	02958920	1	HYD ELBOW ADP, 20MP -20MJIC 90
9	02961115	2	PIPE ADP, 20FP-20FP,90DEG
10	02962748	2	DECAL-ON-OFF SWITCH CUTTER VLV
11	02964028	2	SWITCH PUSH-PULL SPDT 10A@12V
13	03200328	1	DECAL, VALVE IN DETENT POSITION
14	703902	1	LIFT PUMP ASY
15	803213A	1	INTERSTATER OPS MANUAL ASY
16	02979022	1	BELT COVER, WLD'MT
18	001184	1	ADP PIPE,COUPLER,12FP-12FP
19	106939	1	CORDURA SLEEVING - 87" LG
20	107261	3	CORDURA SLEEVING - 40" LG
21	702785	1	PULLEY ASY
22	02956851	1	HYD ELBOW ADP, 16MJ -16FJX90
23	02978281	1	HOSE RING, WLD'MT
24	03200285	2	DECAL, WATCH YOUR STEP
29	001976	1	SUCTION HOSE, #12 - 9" LG
30	108748	2	1" SPACER, CYL COLLAR
31	72414000	1	PIPE ADP, CLOSE NIPPLE, 1-1/4"
32	02981341	1	MANUAL, NH TL INTERSTATER
33	02983275	1	BOLT BAG, NH TL-A DUAL
35	02983305	1	PULLEY ADAPTER, MACHINED
36	02982045	4	PUMP PLATE, SPACER

Above items are included in Carton, Small Parts P/N 02983274 which is included in Component Crate P/N 02983273

Bolt Bag P/N 02983275 (NH TL-A Dual Wing): Includes Items Below

(For NH TL80/80A,TL90'90A,TL100/100A-CAB/ROPS, 2wd w/Aug Pump)

Item	Part No.	Qty	Description
1	02980211	6	BOLT
2	00010300	6	LOCKWASHER
3	02975692	11	BOLT
4	02971158	16	LOCKWASHER
5	02918600	4	BOLT
6	00037200	4	LOCKNUT
7	02892000	3	BOLT
8	00001800	5	LOCKNUT
9	00011100	8	FLATWASHER

Continued Next Page

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Mount Kit - Bill of Material - (ROPS)

Continued From Previous Page

Item	Part No.	Qty	Description
15	00011400	12	BOLT
16	00015800	12	LOCKNUT
17	5312316	4	HARDENED WASHER
19	00755954	6	LOCKWASHER
21	00759635	1	FLATWASHER
22	00756328	6	BOLT
23	00001300	2	LOCKWASHER
24	002521	2	BOLT
25	02975669	1	BOLT
26	02970497	4	BOLT

Above items are included in BOLT BAG ASY P/N 02983275, which is included in CARTON SMALL PARTS P/N 02983274, which is located in COMPONENT CRATE P/N 02983273

REPLACEMENT FUEL TANK P/N 02980424 (27 gal/Req'd for Dual) (NH TL Dual Wing): Includes Items Below

(For NH TL80/80A,TL90//90A,TL100/100A -CAB/ROPS,2wd w/Aux Pump)

Item	Part No.	Qty	Description
1	02980438	1	PLATE FLANGE SENDING UNIT
2	02980439	1	PLATE SUPPORT BOTTOM TANK
3	02976633	1	STEP WLD'MT
4	00017000	4	LOCKWASHER 1/4 PL STD
5	10058000	4	BOLT, HEX HEAD 1/4 NC 1 PL5
6	00001800	4	LOCKNUT TLM 1/2 NC PLB
7	02776600	4	BOLT, HEX HEAD 1/2-13 NC X 1 - 1/4" PL8
8	03200285	1	DECAL, WATCH YOUR STEP
9	108693	1	GAS CAP
10	02981099	1	FUEL TANK WLD'MT- NH TL INTERSTA

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Mount Kit - Bill of Material - (CAB)

IMPORTANT NOTICE: The following Part / Assembly Numbers are for reference and should not be ordered as replacement parts, unless all the components in that assembly are wanted. These will break down to bills of material of the components. Some of numbers listed are NOT individual Parts but complete assemblies and/or box of assemblies. Check before ordering.

TRACTOR: ROPS, 2 WD, Use Aux Pump for Cylinders

SPECIAL COMPONENT CRATE P/N 02981017 (NH TL Dual Wing):

Includes Items Below

(For NH TL80/80A,TL90//90A,TL100/100A -CAB/ROPS,2wd w/Aux Pump)

Item	Part No.	Qty	Description
1	002364	2	HOSE, # 16 -16FJX -16FJX45 - 65.5" LG
2	002365	2	HOSE, # 16 -16FJX -16FJX90 - 62.5" LG
3	703690	1	TANDEM PUMP ASY (J.DEERE)
4	02980151	1	CYLINDER SUPPORT WLD'MT - LH
5	02980152	1	CYLINDER SUPPORT WLD'MT - RH
6	108435	1	LIFT FRAME WLD'MT - LH, TS-SERIES
7	108436	1	LIFT FRAME WLD'MT - RH, TS-SERIES
8	702744	1	VALVE, 4-SPOOL - COMPLETE
9	02980440	1	PUMP BOX ASY - W/1" BEARING
10	02980442	2	TANK RAIL PLATE - NH TL SERIES
11	02980443	2	RAIL SPACER PLATE
12	02980470	1	DRIVELINE, 1"-15 X 30.125
13	02980447	1	SIDE MOUNT WLD'MT - RH
14	02980448	1	SIDE MOUNT WLD'MT - LH
15	02974132	1	HOSE, # 20 - 20FJX - 20FJX90 - 50" LG
16	002464	1	HOSE, # 16 - 16FJX -16FJX90 - 65" LG
17	02980510	1	HOSE, # 16 - 16FJX90 - 16FJX - 50" LG
18	02981018	1	CARTON SMALL PARTS - NH TL DUAL
19	001847	1	HOSE, # 4 - 4FJX - 4FJX90 - 66" LG
20	001979	1	HOSE, # 4 - 4FJX90 - 4FJX - 72" LG
21	001981	1	HOSE, # 4 - 4FJX90 - 4FJX - 41" LG
22	02978872	1	HOSE, # 4 - 4FJX - 4FJX90 - 86" LG
23	03200287	1	HOSE, # 4 - 4FJX - 4FJX90 - 58" LG
24	03200799	1	HOSE, # 4 - 4FJX - 4FJX90 - 77" LG
25	02980995	1	HOSE, # 6 - 6MP - 4MP - 68" LG
26	002361	1	HOSE, # 6 - 4MP - 8MP - 62" LG
27	002500	1	WIRE HARNESS, INT, DUAL W/CAB
28	02966874	1	CABLE BOOT
29	02971203	4	CABLE REMOTE CONTROL, 102" RVC-BLKHD
30	02980149	1	REMOTE VALVE PLATE, FORMED
31	02978025	1	STEP WLD'MT, INTERSTATER WING
32	02981115	1	CONTROL STAND WLD'MT

Above items are included in Special Component Crate P/N 02981017.

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Mount Kit - Bill of Material - (CAB)

CARTON SMALL PARTS P/N 02981018 (NH TL-A Dual Wing): Includes Items Below

(For NH TL80/80A,TL90'90A,TL100/100A-CAB/ROPS, 2wd w/Aug Pump)

Item	Part No.	Qty	Description
1	001412	1	DECAL, CONTROL VALVE
2	001767	1	BELT DRIVE (5L260)
3	001796	2	HOSE BIB FITTING, #12HOSE-#12MP
4	00751505	2	HOSE CLAMP, FOR #12 HOSE
5	00758194	1	DECAL, WARNING BELT SHIELD
6	00763977	1	DECAL, NOTICE TO OWNER
7	02958920	1	HYD ELBOW ADP, 20MP -20MJIC 90
8	02961115	2	PIPE ADP, 20FP-20FP,90DEG
9	02962748	2	DECAL, ON-OFF SWITCH CUTTER VLV
10	02964028	2	SWITCH PUSH-PULL SPDT 10A@12V
11	03200328	1	DECAL, VALVE IN DETENT POSITION
12	703902	1	LIFT PUMP ASY
13	803213A	1	INTERSTATER OPS MANUAL ASY
14	02979022	1	BELT COVER WLD'MT
15	001184	1	PIPE COUPLER ADP, 12FP-12FP
16	702785	1	PULLEY ASY
17	02956851	1	HYD ELBOW ADP, 16MJ -16FJX 90
18	02978281	2	HOSE RING WLD'MT
19	03200285	2	DECAL, WATCH YOUR STEP
20	02980444	1	PULLEY ADAPTER - MACHINED
21	00774909	4	SPACER
22	02981019	1	BOLT BAG - NH TL DUAL
23	02906300	3	CORDURA SLEEVING - 48" LG
24	02966873	1	DWG INST BOOT
25	107260	1	CORDURA SLEEVING - 27" LG
26	108748	2	SPACER, 1 CYL COLLAR
27	72414000	1	PIPE ADP, 1-1/4 CLOSE NIPPLE
28	001976	1	SUCTION/HOSE #12 - 9" LG
29	02981108	2	SPACER, 1-1/4" PUMP PLATE
30	02981341	1	MANUAL, NH TL INTERSTATER
31	02981810	1	CONTROL LEVER, SHORT SNGL AXIS

Above items are included in Small Carton Parts P/N 02981018 which is in Special Component Crate P/N 02981017

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Mount Kit - Bill of Material - (CAB)

BOLT BAG P/N 02981019 (NH TL-A Dual Wing): Includes Items Below

(For NH TL80/80A,TL90'90A,TL100/100A-CAB/ROPS, 2wd w/Aug Pump)

Item	Part No.	Qty	Description
1	00753723	4	BOLT, HEX HEAD M8-P1.25 x 25mm PL GR10.9
2	02970065	4	LOCKWASHER, 8MM
3	02980211	6	BOLT, HEX HEAD M16-P1.5 X 130MM PL GR10.9
4	00010300	6	LOCKWASHER, 5/8
5	02975692	10	BOLT, HEX HEAD M20-P2.5 - 50MM PL10.9
6	02971158	16	LOCKWASHER, 20MM
7	02918600	4	BOLT, HEX HEAD 3/4-10UNC 2 PL GR8
8	00037200	4	NUT 3/4 NC LOCKNUT
10	00001800	4	LOCKNUT TLM 1/2 NC PLB
12	00752716	2	BOLT, HEX HEAD 1/2 NC 3-1/2 PL GR8
15	00011400	2	BOLT, HEX HEAD 3/8 NC X 1 PL GR5
16	00015800	2	LOCKNUT TLM 3/8
17	5312316	4	WASHER, 3/4" HARDENED
18	02975738	2	BOLT, HEX HEAD M20-P2.5 X 70MM PL GR10.9
19	00755954	6	LOCKWASHER M10 SPRIN
20	0744400	4	BOLT,HEX HEAD M10-P1.25 X 60MM PL GR8.8
21	00759635	1	FLATWASHER 1/2 HRDED NONPLTD
22	02776600	2	BOLT, HEX HEAD 1/2-13 NC X 1 1/4" PL GR8
23	00755082	2	BOLT, HEX HEAD 5/8 NC 2-1/2 PL GR8
24	00695100	2	LOCKNUT TLM5/8
25	000035	4	NUT HEX 1/4 NF
26	001856	4	PIN ROLL 5/32X 3/4 PL
27	106721	4	CLEVIS, CABLE
28	00023500	3	FLATWASHER 5/16 PL
29	00750940	3	LOCKNUT TLM 5/16 NC PLB
30	02965619	3	BOLT, HEX HEAD 5/16NC 8 PL GR5
31	00756147	2	BOLT, HEX HEAD M10-P1.5 x 55mm PL GR10.9
32	02976113	4	BOLT, HEX HEAD M20-P2.5 X 80MM PL GR10.9

Above items are included in Bolt Bag P/N 02981019 which is in Carton Small Parts P/N 02981018 which is in Special Component Crate P/N 02981017

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Mount Kit - Bill of Material - (ROPS)

SPECIAL COMPONENT CRATE P/N 02980333 (NH TL Dual Wing): Includes Items Below

(For NH TL80/80A,TL90//90A,TL100/100A -CAB/ROPS,2wd w/Aux Pump

Item	Part No.	Qty	Description
1	002364	2	HOSE, # 16 -16FJX -16FJX45 - 65.5" LG
2	002365	2	HOSE, # 16 -16FJX -16FJX90 - 62.5" LG
3	02980334	1	CARTON SM PARTS - NH TL DUAL
4	001770	2	HOSE, # 4 - 4FJX - 4FJX - 58" LG
5	001771	1	HOSE, # 4 - 4FJX - 4FJX - 48" LG
6	001772	1	HOSE, # 4 - 4FJX - 4FJX - 79" LG
7	001773	1	HOSE, # 4 - 4FJX - 4FJX - 89" LG
8	001774	1	HOSE, # 4 - 4FJX - 4FJX - 86" LG
9	002498	1	WIRE HARNESS, INT, DUAL POWER
10	106596	1	VALVE MOUNTING BRKT WLD'MT
11	106597	1	COVER, TOP
12	106598	1	COVER, BOTTOM
13	703690	1	TANDEM PUMP ASY (J.DEERE)
14	02980151	1	CYLINDER SUPPORT WLD'MT - LH
15	02980152	1	CYLINDER SUPPORT WLD'MT - RH
16	108435	1	LIFT FRAME WLD'MT - LH - TS-SERIES
17	108436	1	LIFT FRAME WLD'MT - RH - TS-SERIES
18	108766	1	VALVE STAND WLD'MT - RH
19	02980282	1	HOSE, # 6 - 6MP - 4MP - 94" LG
20	02980283	1	HOSE, # 6 - 4MP - 8MP - 73" LG
21	702744	1	4-SPOOL VALVE, COMPLETE
22	02980440	1	PUMP BOX ASY - W/1" BEARING
23	02980442	2	TANK RAIL PLATE - NH TL SERIES
24	02980443	2	RAIL SPACER PLATE
25	02980447	1	SIDE MOUNT WLD'MT - RH
26	02980448	1	SIDE MOUNT WLD'MT - LH
27	02980470	1	DRIVELINE 1"-15 X 30.125
28	02974132	1	HOSE, # 20 - 20FJX - 20FJX90 - 50" LG
29	002464	1	HOSE, # 16 - 16FJX - 16FJX90 - 65" LG
30	02980510	1	HOSE, # 16 - 16FJX90 - 16FJX - 50" LG

Above items are included in Special Component Crate P/N 02980333.

Carton Small Parts P/N 02980334 (NH TL-A Dual Wing): Includes Items Below

(For NH TL80/80A,TL90'90A,TL100/100A-CAB/ROPS, 2wd w/Aug Pump)

Item	Part No.	Qty	Description
1	001412	1	DECAL, CONTROL VALVE
2	001767	1	DRIVE BELT
3	001796	2	HOSE BIB FITTING, #12HOSE- #12MP
4	00751505	2	HOSE CLAMP, F/ #12 HOSE
5	00758194	1	DECAL, WARNING BELT SHIELD
6	00763977	1	DECAL, NOTICE TO OWNER

Continued Next Page

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Mount Kit - Bill of Material - (ROPS)

Continued From Previous Page

Item	Part No.	Qty	Description
7	02958920	1	HYD ELBOW ADP, 20MP -20MJIC 90
8	02961115	2	PIPE ADP, 20FP-20FP,90DEG
9	02962748	2	DECAL, ON-OFF SWITCH CUTTER VLV
10	02964028	2	PUSH-PULL SWITCH, SPDT 10A@12V
11	03200328	1	DECAL, VALVE IN DETENT POSITION
12	703902	1	LIFT PUMP ASY
13	803213A	1	INTERSTATER OPS MANUAL ASY
14	02979022	1	BELT COVER WLD'MT
15	02980335	1	BOLT BAG NH TL DUAL
16	001184	1	PIPE COUPLER ADP, 12FP-12FP
17	106939	1	CORDURA SLEEVING - 87" LG
18	107261	3	CORDURA SLEEVING - 40" LG
19	702785	1	PULLEY ASY
20	02956851	1	HYD ELBOW ADP, 16MJ -16FJX 90
21	02978281	1	HOSE RING WLD'MT
22	03200285	2	DECAL, WATCH YOUR STEP
23	02979691	2	SPACER, PUMP PLATE
24	02980444	1	PULLEY ADAPTER - MACHINED
25	00774909	4	SPACER
26	001976	1	SUCTION/HOSE, #12 - 9" LG
27	108748	2	SPACER, 1" CYLINDER COLLAR
28	72414000	1	PIPE ADP, 1-1/4" CLOSE NIPPLE
29	02981341	1	MANUAL, NH TL INTERSTATER

Above items are included in Carton Small Parts P/N 02980334 which is included in Special Component Crate P/N 02980333

Bolt Bag P/N 02980335 (NH TL Dual Wing): Includes Items Below

(For NH TL80/80A,TL90'90A,TL100/100A-CAB/ROPS, 2wd w/Aug Pump)

Item	Part No.	Qty	Description
1	00753723	4	BOLT, HEX HEAD M8-P1.25 x 25mm PL GR10.9
2	02970065	4	LOCKWASHER, 8MM
3	02980211	6	BOLT, HEX HEAD M16-P1.5 X 130MM PL GR10.9
4	00010300	6	LOCKWASHER 5/8
5	02975692	11	BOLT, HEX HEAD M20-P2.5 -50MM PL GR10.9
6	02971158	16	LOCKWASHER, 20MM
7	02918600	4	BOLT, HEX HEAD 3/4-10UNC 2 PL GR8
8	00037200	4	NUT 3/4 NC LOCKNUT
9	02892000	3	BOLT, HEX HEAD 1/2"-13 NC x 1-1/2" PL GR8
10	00001800	5	LOCKNUT TLM 1/2 NC PLB
12	00752716	2	BOLT, HEX HEAD 1/2 NC 3-1/2 PL GR8
14	00011100	8	FLATWASHER STD 3/8
15	00011400	12	BOLT, HEX HEAD 3/8 NC X 1 PL GR5
16	00015800	12	LOCKNUT TLM 3/8
17	5312316	4	WASHER, 3/4" HARDENED
19	00755954	4	LOCKWASHER M10 SPRIN
20	0744400	4	BOLT, HEX HEAD M10-P1.25 X 60MM PL GR8.8
21	02975738	5	BOLT, HEX HEAD M20-P2.5 X 70MM PL GR10.9
22	00759635	1	FLATWASHER 1/2 HRDED NONPLTD

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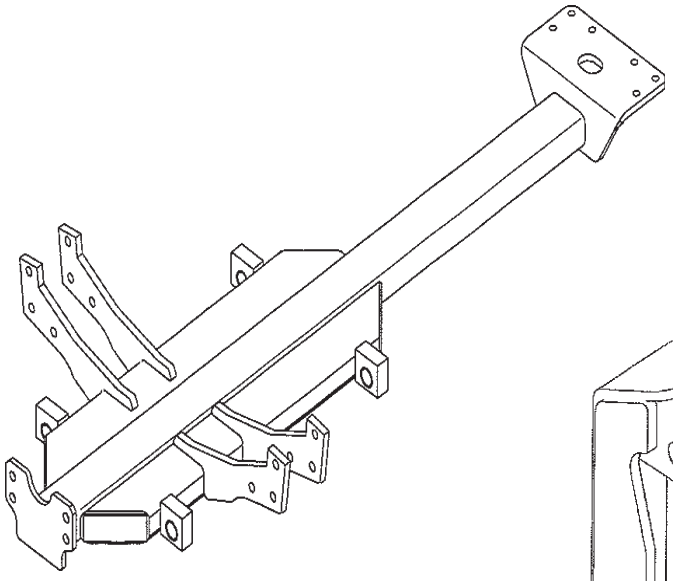
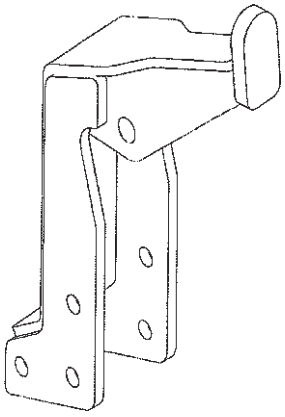
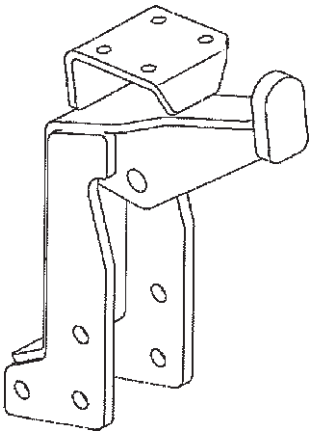
Components Identification



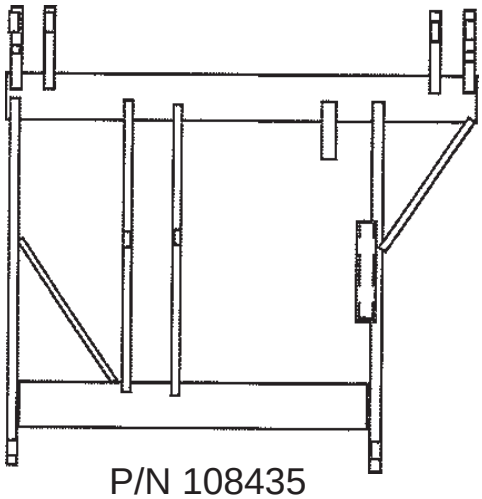
P/N 02980423
Main Frame Weldment
Dual Wing
(5"Offset Left & Right)



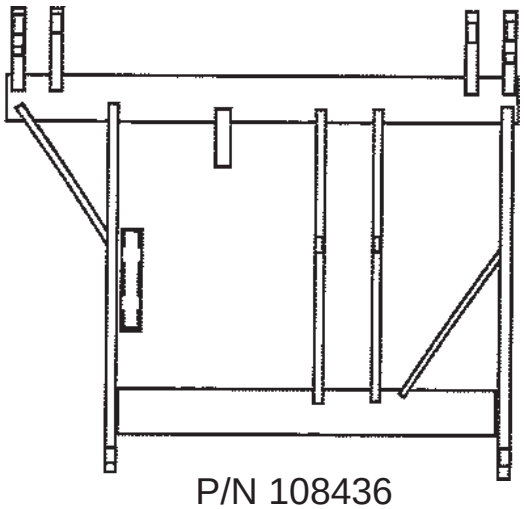
P/N 02980151
Cyl. Support Weldment LH
(Cab or Rops Tracror)



P/N 02980152
Cyl. Support Weldment RH
(Cab or Rops Tracror)



P/N 108435
Lift Frame Weldment
LH Wing
(Cab or Rops Tractor)



P/N 108436
Lift Frame Weldment
RH Wing
(Cab or Rops Tractor)

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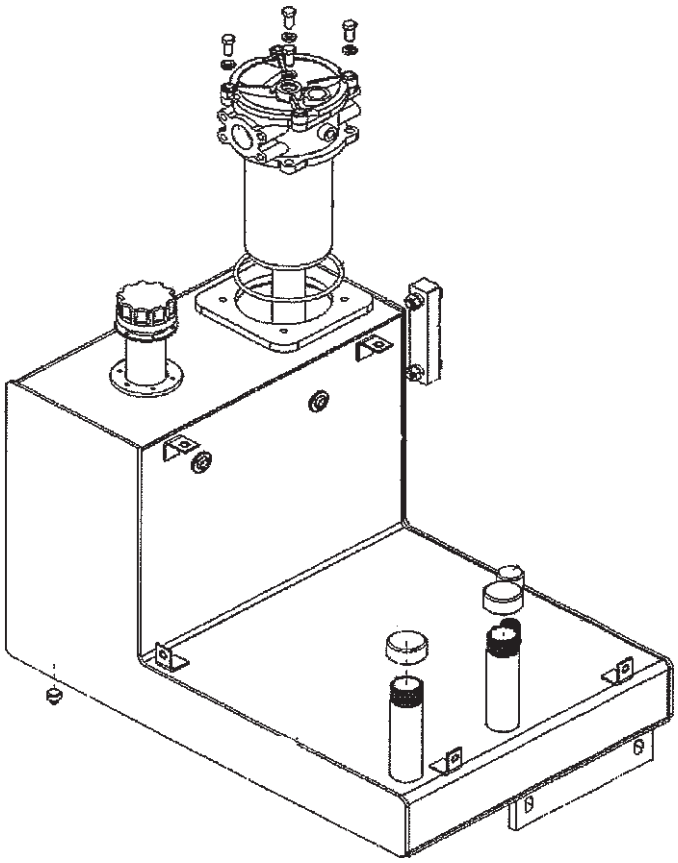
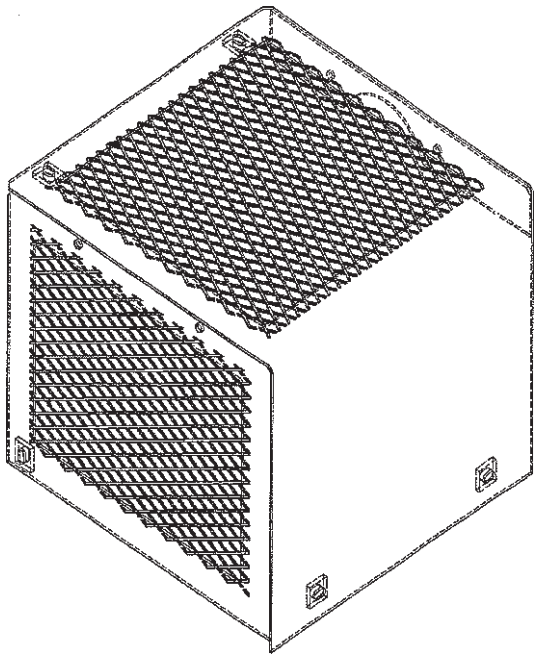
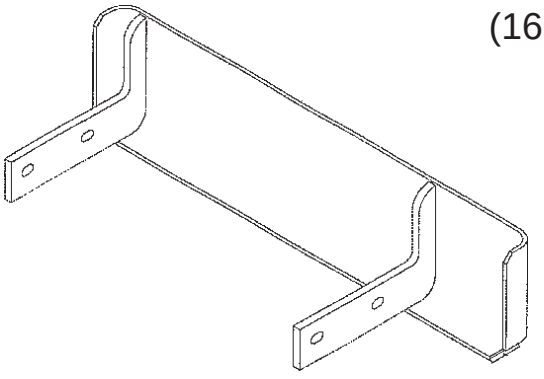
Components Identification



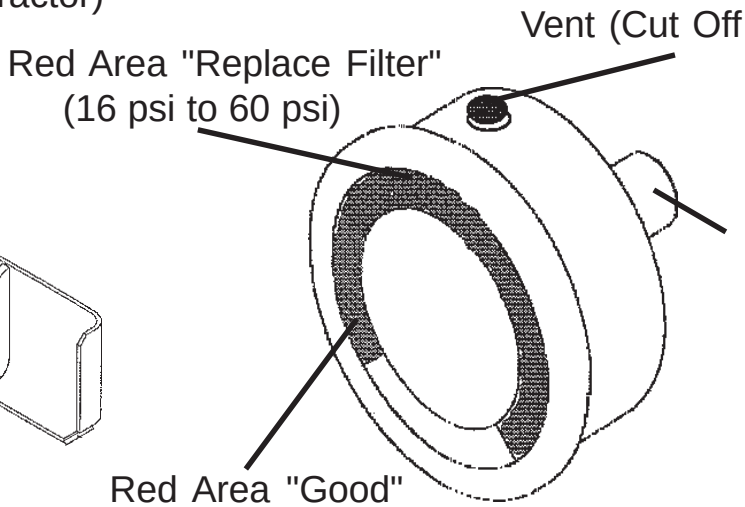
P/N 02981133
Tank Sub-Assembly
(Cab or Rops Tractor)



P/N 02981124
Tank Cover Weldment
(Cab or Rops Tractor)



P/N 106572
Bumper Weldment
(Cab or Rops Tractor)



P/N 02962963
Return Pressure Gauge
(Glycerin Filled)
(Cab or Rops Tractor)

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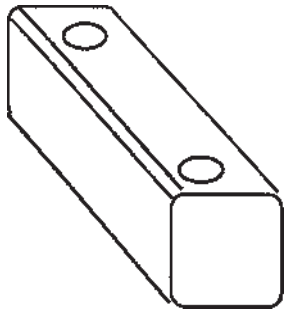
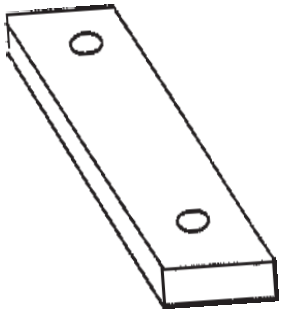
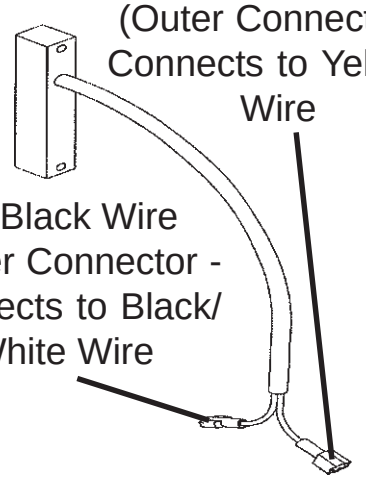
Components Identification



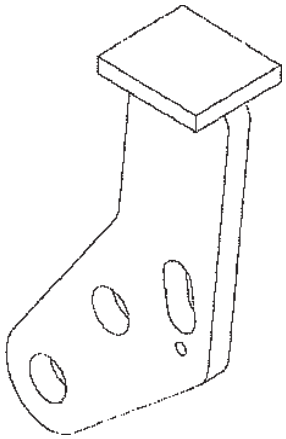
P/N 002019
Magnetic Switch Activator
(Cab or Rops Tractor)



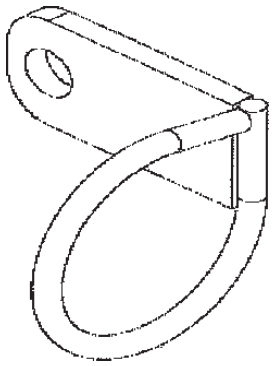
P/N 002020
Spacer, Plastic
(Cab or Rops Tractor)



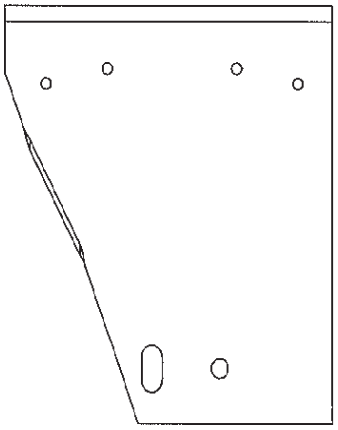
P/N 703520
Switch, Safety Cut-Off
(Cab or Rops Tractor)



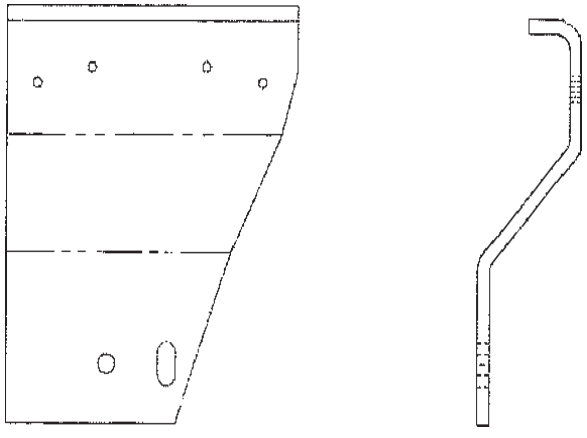
P/N 002019
Magnetic Switch Activator
(Cab or Rops Tractor)



P/N 02988281
Hose Ring Weldment



P/N 107225
Cut-Off Switch Mount,LH
(Cab or Rops Tractor)



P/N 107224
Cut-Off Switch Mount,RH
(Cab or Rops Tractor)

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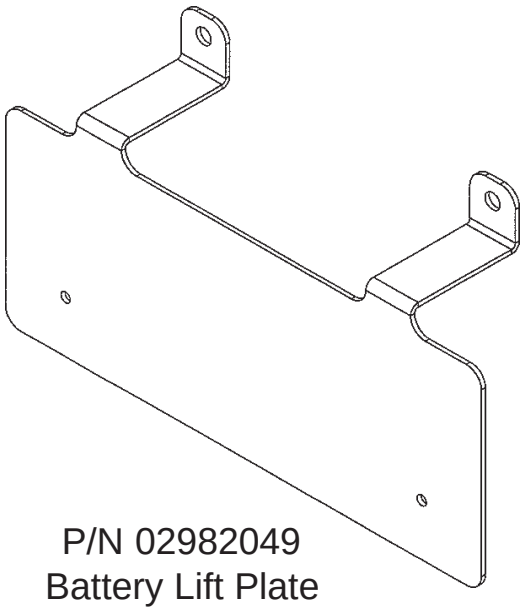
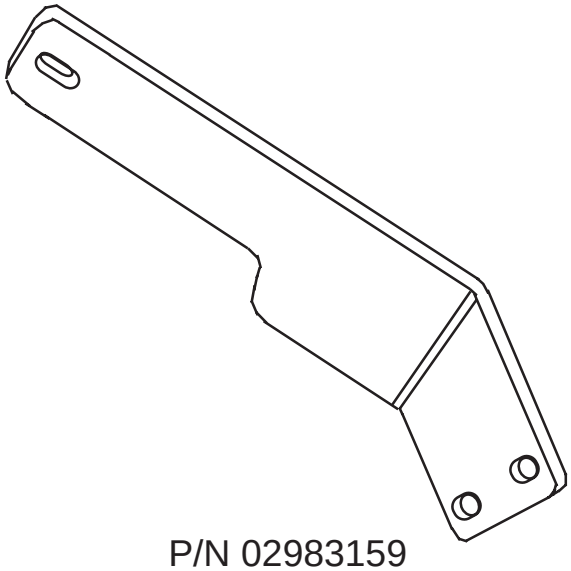
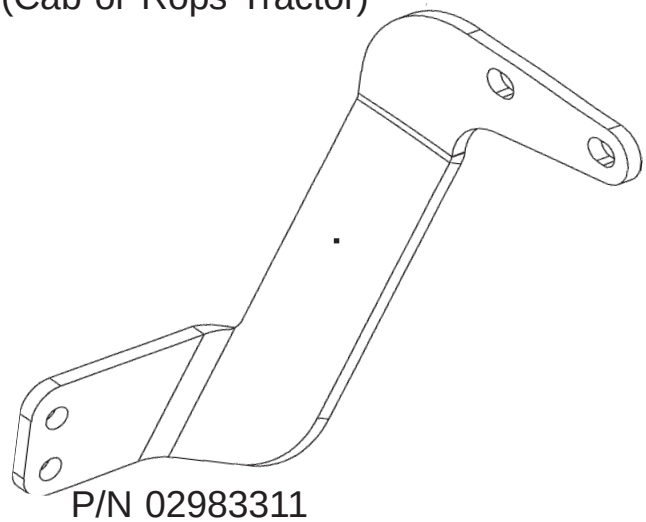
Components Identification



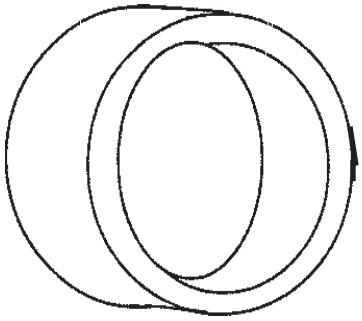
P/N 02982049
Battery Lift Plate
(Cab or Rops Tractor)



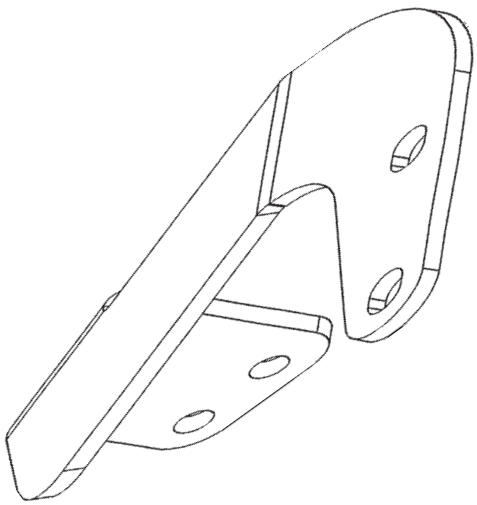
P/N 02983159
Exhaust Stabilizer, top Bracket
(Cab Tractor)



P/N 02983311
Side Mount Plate LH
(Rops Tractor)



P/N 108748
Spacer, 1 Cyl. Collar
(Rops Tractor)



P/N 02983312
Side Mount Plate RH
(Rops Tractor)

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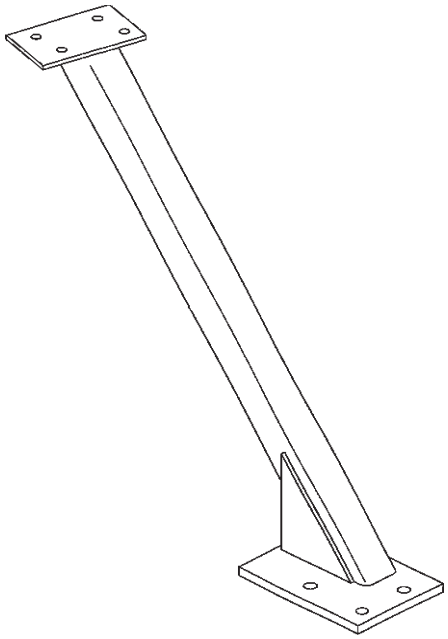
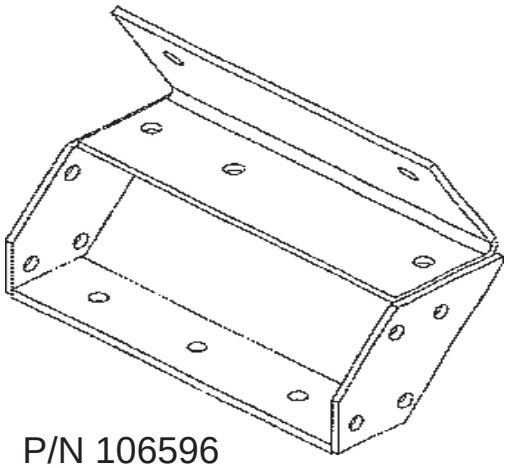
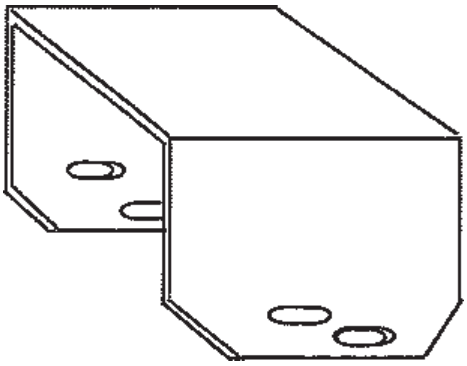
Components Identification



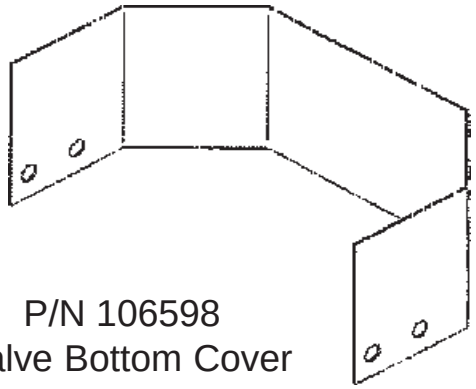
P/N 02983358
Valve Stand Wld'mt RH
(Rops Tractor)



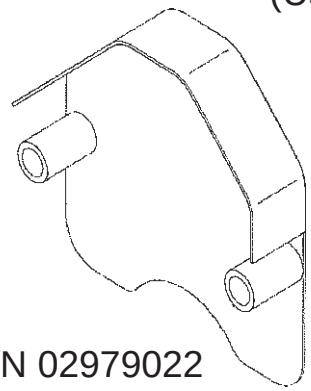
P/N 106596
Valve Mounting Bracket
(Rops Tractor)
(Use w/Aux. Hyd. System)



P/N 106597
Valve Top Cover
(Rops Tractor)
(Use w/Aux. Hyd. System)



P/N 106598
Valve Bottom Cover
(Rops Tractor)
(Use w/Aux. Hyd. System)



P/N 02979022
Belt Guard Weldment
(Rops Tractor)
(Use w/Aux. Hyd. System)

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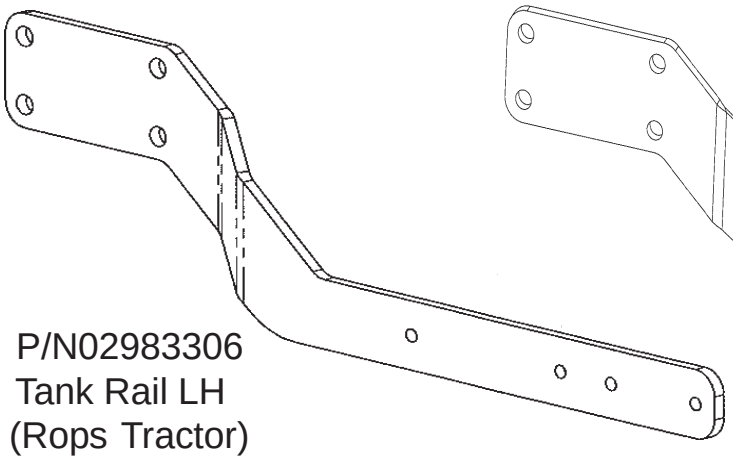
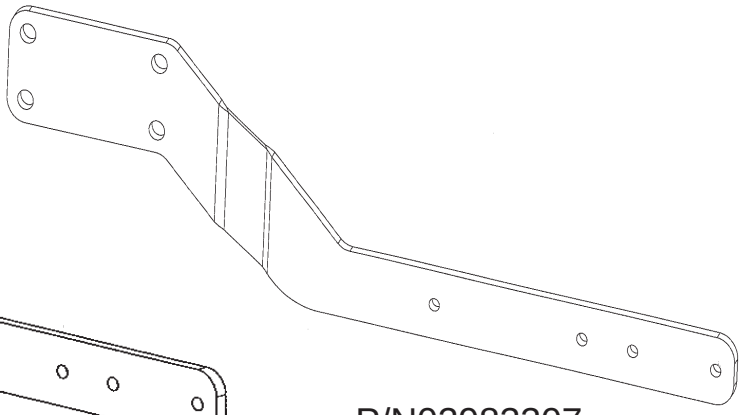
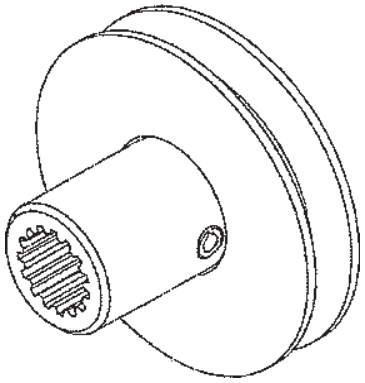
Components Identification



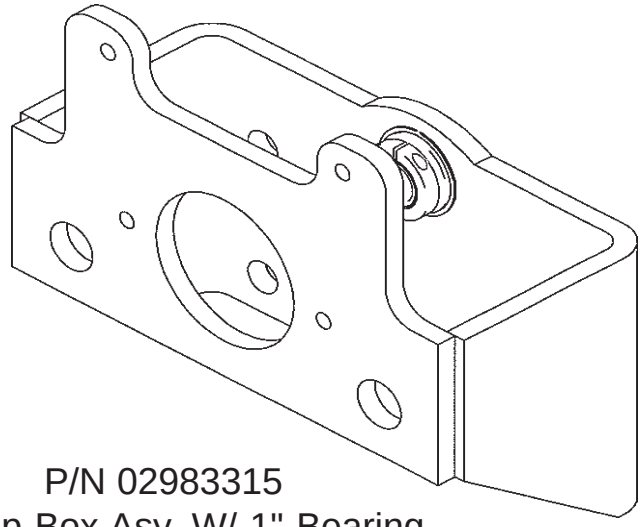
P/N02983306
Tank Rail LH
(Rops Tractor)



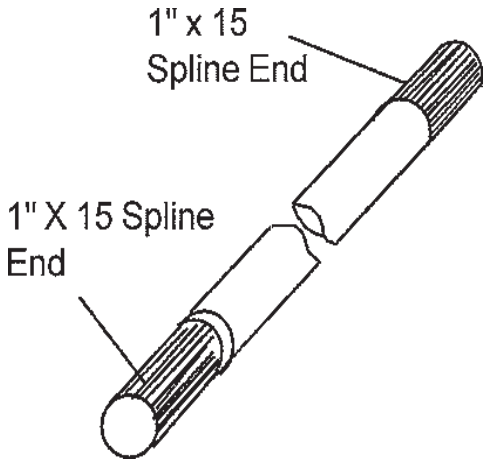
P/N02983307
Tank Rail RH
(Rops Tractor)



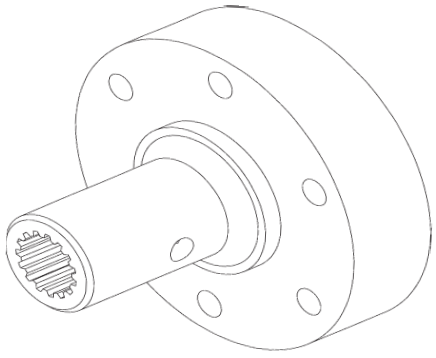
P/N 702785
Pulley Weldment
w/Roll Pin
(Cab or Rops Tractor)



P/N 02983315
Pump Box Asy, W/ 1" Bearing
(Rops Tractor)



P/N 02983322
Driveline 1-15 x 1-15 x 31.125
(Rops Tractor)



P/N 02983305
Pulley Adapter
(Rops Tractor)

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NOTES

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Insterstater Assembly Manual
New Holland
TL-80, TL-90 & TL-100
2004 Edition
P/N 02981341

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